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PRACTICAL TREATISE  
ON  
PAINTING  
IN  
OIL-COLOURS.

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PRAC TICAL TESTS

PRINTING

COLORS





# PRACTICAL TREATISE

ON

PAINTING

IN

OIL-COLOURS.

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“ Painters spend many years in the search after knowledge,  
“ which they might have attained in a little time, had they hit  
“ at first on the right path.”

DE PILES.

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LONDON:

PRINTED FOR B. AND J. WHITE, FLEET-STREET.

1795.

# PRAGMATICAL TREATISE

## PAINTING

OLD-COLORS.

The first object in painting is to  
represent the action of others or a  
personal application, picturesque  
will then frequently rejected. When  
an enigma is attained is the  
then abundantly rewarded, and price  
and en v co-operate with avarice to  
render the progress of knowledge  
difficult and expensive.

PRINTED FOR S. AND J. WHITE, LONDON.

1807.

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## P R E F A C E.

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**BY** minds already stored with information, whether it be acquired by the instruction of others or by dint of personal application, preceptive books will be frequently rejected. What has been diligently attained is too often assiduously hoarded; and pride and envy co-operate with avarice to render the progress of knowledge difficult and expensive.

A 3

TIME,

TIME, however, has wrought a change in the opinions of men, and what a few may superciliously despise, the multitude now eagerly embrace. Happy, indeed, are these changes for the generality of human kind! Arrogance and ignorance are expelled the land; and, linked in one couple, are journeying to oblivion, and nearly out of sight!

THE present age seems to be, of all others, more distinguished for the strong impulse which has been given to the human mind, in whatever has a near relation to philosophy. The zeal of science is unbounded, and its votaries have accumulated beyond the powers of common calculation. Knowledge and taste, so happily combined, have spread their influence in almost

P R E F A C E.      vii

almost every direction ; and have prepared the minds of the rising generation for the expansion of Genius, and the reception of Truth.

FACTS judiciously arranged, and published from time to time as they accumulate, are productive of infinite advantage ; for so few are in circumstances to acquire knowledge, and those few so quickly pass away, that, without a fund of this sort, all interest would be lost to mankind. Every branch of science is much facilitated and advanced by public communication, which distinctly points out the present, and opens a free channel to future, discoveries. Many are well qualified for extending the bounds of science, whose ardor is checked by the failure of experiments, and who



are continually mortified to find they have been long since anticipated by others. Records of this kind act, therefore, as stimulants to general improvement: what is already known need not be retraced, and what is discovered in future may be occasionally added: thus, the needy and the diffident will be taught with œconomy and ease, and mystery will be unfolded and converted into truth.

HITHERTO, the skilful practice of *Painting in Oil* has been chiefly in the possession of a few; so few, as to make the works of moderate artists appear to great advantage, if they claim only a superiority in the department of *colouring*. It is well known, that Nature is more admired by the common observer for the richness and variety

of her tints, than for the mere outline of her forms: when, therefore, truth of colouring is so eminently prominent, how much ought its principles to be studied, and its effects to be understood!

WITH a design truly laudable, a "Treatise on the Practice of Painting in Oil" was published as far back as the year 1756, which went through two, if not more, editions in 4to. The author, Mr. Thomas Bardwell, was a man well qualified for this undertaking, as he had been employed very closely in copying the choicest works of Rubens and Vandyke. The Earl of Rochford, to whom he has dedicated his work, was one of his principal patrons.

"THE

“THE motive,” says he, “of my  
“publishing, is solely the *benefit of the*  
“*Art*. Such as are born with a happy  
“genius, though destitute of a guide,  
“may from these instructions acquire  
“a competent knowledge of *Colour-*  
“*ing*. Here the lovers of Painting,  
“who study for their pleasure and  
“amusement, may be conducted easi-  
“ly, step by step, to the *secrets* of that  
“Art, which, of all the designing  
“ones, affords the greatest pleasure to  
“the mind.—There is no difference  
“in the method of working between  
“*Copying*, and painting from *Nature*.  
“Had I known, at my first setting  
“out, as much as I have since learn-  
“ed, I should have approached nearer  
“perfection; but others, who have  
“the advantage of *youth*, may, I am  
“persuaded, attain the end I propose.”

Since

Since the first appearance of the above publication, Great Britain has received a considerable advancement in the institution of a Royal Academy, which has embodied so much excellence as to have increased the general stock of information.

THE late learned and elegant President, speaking of the use of *copying*, thus expresses himself \* :—"If it be  
 " at all useful, it should seem to be in  
 " learning to *colour*; yet even colour-  
 " ing will never be perfectly attained  
 " by servilely copying the model be-  
 " fore you. An eye critically nice  
 " can only be formed by observing  
 " well-coloured pictures with atten-  
 " tion: and by close inspection, and  
 " minute examination, you will dis-

\* Discourse 2d, delivered December 11, 1769.



“cover, at last, the manner of handling, the artifice of contrast, glazing, and other expedients by which good colourists have raised the value of their tints, and by which Nature has been so happily imitated.”—But if “*an eye critically nice*” can happily imitate Nature, how much greater assistance is needed by the eye that is untutored and unaccustomed to speculate!—Were the materials with which Nature’s hues are practically imitated, so exact in their tints, and so fixed in their nature, as to admit of instant perfection, without change, then indeed mere observation would be sufficient: unhappily, however, the reverse is the case, and scarcely one artist in ten is chemically acquainted with the bodies he is using\*.

\* An Artist of eminence being cautioned against the



*Practical information is strongly needed*; and if the great masters, whose manner of colouring has been approved, had communicated it in writing to posterity, so frank and generous a conduct would have produced more good pictures than all the lectures that have been delivered.

WITH the fixed resolution of extending that information which time and experience have firmly sanctioned, this work is undertaken; nor will it contain any thing but reality. Whatever suggestions are offered to consideration, will be appended in the profuse admixture of *Sugar of Lead* in his colours, replied, "that he never made use of it; he thought "*Sacrum* far preferable to it."—*Sacrum* is a corrupt and abbreviated name for *Saccharum Saturni*, or *Sugar of Lead*.

form

form of Notes, or will at least be kept separate and distinct from the main body of the work.

IN a Treatise of this nature, much will be found that is already known, and much that may participate of novelty ; but as knowledge is by necessity accumulative, good sense will furnish an apology for that which would otherwise disgust. For the projector's part, he may safely say, that however inferior his abilities may be to the undertaking, no one will be found possessed of more genuine zeal and good will in its favour.

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## INTRODUCTION.

MANY learned and ingenious men have employed the acumen of their talents in explaining the theory of light and colours, which form a very important part of the science of painting. To excel in *colouring*, the artist must be thoroughly well grounded in the principles of that branch of optics which treats of the nature of light. He will there find that *white*, by which light may be otherwise termed, is not, philosophically speaking, a simple and primitive colour, but is compounded of several colours, of which the number and proportion are well

B known.



## 2 INTRODUCTION.

known. By means of a glass prism, the component rays of light may be separated into seven distinct parcels exhibiting red, orange, yellow, green, blue, indigo, violet; and although these rays are immutable in themselves, yet they are continually separating from each other in their passage through the various objects they may meet. Thus, for instance, *grass* reflects the *green* rays of light, while *port wine* reflects the *red* rays; and substances that participate of other colours, have this peculiar property accounted for on similar reasoning. By this frequent separation of different rays is nature so beautifully diversified (*a*).

DA

(*a*) On this interesting subject the reader may consult George Adams's Lectures, edit. 8vo, 1794, viz. Lectures 15, 16, 17, 18, 19, 20; in which he will find

## INTRODUCTION. 3

DA VINCI (*b*) seems to have been aware of the truth of *light being only an assemblage of colours*, although the proof was left to be exemplified by the immortal Newton. So valuable a discovery must be allowed to be highly serviceable to the student in painting; for though Titian, Corregio, &c. became great colourists without this knowledge, yet to be

find the whole Newtonian system familiarly explained, together with the opinions of Mr. Huxley Delaval, which, though now strongly combated, are highly ingenious.—To a mind yet further anxious for philosophic investigation, an original work of real excellence may be consulted, which, though it opposes the opinions of Newton and Delaval, is deserving of the most serious investigation, viz. “Experimental Researches concerning the Philosophy of Permanent Colours—by Edward Bancroft, M. D. edit. 8vo, 1794.”

(*b*) Trattato della Pittura, c. 14.

B 2

acquainted

#### 4 INTRODUCTION.

acquainted with the philosophy of colours, is to be directed immediately to the view of those tints which might otherwise be found out by casualty. To him who shall know—that two colours reflecting on each other form a third—the painting a sunset will be easy; for though the light be tinged with yellow or red, yet, if the sky be blue, a greenish tint will be formed, more or less in proportion to the depth of the yellow (*c*). This discrimination is in reality foreknown by  
the

(*c*) This *greenish tint*, which may be termed *incipient twilight*, is distinguishable in a high degree, if the student will keep patiently viewing the gradual declension of the sun. When the glow of the evening begins to slacken, a peculiar chill will pervade his whole frame, which is not entirely to be attributed to the absence of warmth, but in part to the *cold* sensation produced on the optic nerve  
by

## INTRODUCTION. 5

the scientific student, which might have been totally missed by any other, except "*the eye critically nice.*" But how few possess a correct eye to nature may be known by inspecting the works of different masters, in which every style will vary; while nature, which they are endeavouring to imitate, is uniform in her system (*d*). It may be said on this subject, without

by a *green colour*.—To render this nicety a little more palpable, for in fact it is a matter of feeling, let the reader view a glowing fire through the medium of *green glass*, and his eyes will instantly feel cool. Perhaps this may be further exemplified by contrast: let the reader view a well-painted *fire*, and he will be led to feel himself *warm*.—Some of Claude's pictures have this *slightly greenish hue of twilight* floating lightly in the air, under the appearance of a *thin vaporous mist*: so have many of the works of Vernet.

(*d*) In the Philosophical Transactions for the

## 6 INTRODUCTION.

without a blush of falsehood,—so few succeed in imitating the local hues of nature,  
that,

year 1777, is an account of a man who had so extraordinary a defect in his vision as to be incapacitated from distinguishing colours. The history of this singular person, who lived at Maryport in Cumberland, was communicated by Mr. Huddart to Dr. Priestley.—As the full account would be too long for inserting here, we must refer the reader to the account itself; the following however is the outline:—His name was Harris, by trade a shoemaker. He could discern the form and magnitude of bodies, but could not distinctly see their colours: he could see cherries on a tree, but could not say whether they were white or black. In general, all light colours he termed white, and all dark colours black. He was so anxious to know the nature of light and colours, that he attended a course of lectures in natural philosophy.—Two of his brothers were in like circumstances; but two other brothers and sisters, as well as his parents, had nothing of this defect. He did not imagine that colours were mere differences



## INTRODUCTION. 7

that, out of a whole academy, Reynolds scarcely had a rival (*e*).

BUT, besides the superiority acquired by the study of optics in what has been just enumerated, the same principles will fully explain many other things practised by painters; for, were their works not judged of on the basis of philosophy, a considerable share of their merit must be attributed to

ences of light and shade, but believed, from the remarks of others, that they were various and distinct.

(*e*) Of late years the art of colouring has been assiduously cultivated in the British school, owing in a great measure to the emulation excited by that great master, Sir Joshua Reynolds. Could the experiments in which he failed, and those in which he succeeded, be collected and divulged, a considerable advantage must of consequence ensue; for *good* is a result compounded of the avoidance of error and the practice of right.

chance rather than learning. He who has viewed the effects of nature with an eye directed by sound education will be able to establish general rules, where another will gain only particular cases.

WITH regard to the application of these scientific rules to painting, the works of the best colourists are to be carefully examined: these are the records which a young painter ought ever to be studying, that he may be enabled to express the beauty of objects with the utmost truth and exactness.—“With respect to colouring,” says Sir Joshua (*f*), “though it may appear at first a part of painting merely mechanical, yet it still has its rules, and those grounded upon that presiding principle which regulates both

(*f*) Discourse, read December 10, 1771.

“the

## INTRODUCTION. 9

“the great and little in the study of  
 “a painter. By this, the first effect of  
 “the picture is produced; and as this  
 “is performed, the spectator as he walks  
 “the gallery will stop, or pass along.”—  
 Aware, however, of the misfortune to  
 which a young artist may be exposed  
 by placing too great confidence in very  
 old pictures, he judiciously remarks—  
 “I must inform you, however (*g*), that  
 “old pictures deservedly celebrated for  
 “their colouring, are often so changed  
 “by dirt and varnish, that we ought  
 “not to wonder if they do not appear  
 “equal to their reputation in the eyes  
 “of unexperienced painters, or young  
 “students. An artist whose judgment  
 “is matured by long observation, con-  
 “siders rather what the picture once was,

(*g*) Discourse, read December 11, 1769.

“than

10 INTRODUCTION.

“ than what it is at present. He has ac-  
“ quired a power by habit of seeing the  
“ brilliancy of tints through the cloud by  
“ which it is obscured. An exact imi-  
“ tation, therefore, of those pictures is  
“ likely to fill the student's mind with  
“ false opinions; and to send him back  
“ a *colourist of his own formation*, with  
“ ideas equally remote from nature and  
“ from art, from the genuine practice of  
“ the masters, and the real appearances  
“ of things.

“ FOLLOWING these rules, and using  
“ these precautions, when you have clearly  
“ and distinctly learned in what good co-  
“ louring consists, you cannot do better  
“ than have recourse to nature herself,  
“ who is always at hand, and in compa-  
“ rison of whose true splendor the best-  
“ coloured

## INTRODUCTION. II

“ coloured pictures are faint and feeble.  
“ However, as the practice of *copying* is  
“ not entirely to be excluded, since the  
“ *mechanical practice of painting is learned*  
“ *in some measure by it*, let those choice  
“ parts only be selected which have re-  
“ commended the work to notice. If  
“ its excellence consist in its general ef-  
“ fect, it would be proper to make slight  
“ sketches of the machinery and gene-  
“ ral management of the picture. These  
“ sketches should be kept by you for the  
“ regulation of your style.”

MUCH is it to be lamented that the Academy of Painting does not possess models of *colouring* as well as models of design, that the student may learn in what the excellence of the best colourists consists, ere he attempt to quit the school to imitate  
nature



## 12 INTRODUCTION.

nature in the fields. — But if it be objected, that the cost of a collection sufficiently valuable and various for this purpose would be too great, let a living model at least be procured, where the carnations rich and healthy may be faithfully imitated as to the variety of the local hues. Were this model usefully employed, it would be placed in various lights; now in the beams of the sun, now in a more sober light, and now in the light of a lamp or candle; at one time in the shade, at another in a reflected light. By such practical artifices the complexion of the body under different circumstances may be thoroughly learned and mastered; and the tints and half-tints produced in the colour of the skin by bones, blood-vessels, or fat, may be duly attended to and discriminated. A student thus instructed

## INTRODUCTION. 13

structed would not be too forward in giving that rosy appearance to the flesh which we so often find in practice; but would modestly adhere to the dictates of nature, as the fountain head of that perfection to which he is constantly aspiring.

By these means the approaches to a true knowledge of colouring are evidently attainable. From the *theory of light*, &c. which the science of optics will completely furnish, the next step naturally tends to the appropriation of those principles as practised by the best colourists; after which, the *practical application of the materials* by which colouring is produced, will consequently occupy the attention.

It has been a generally received opinion, that the ancient painters had no  
more

## 14 INTRODUCTION.

more than four colours, out of which all their other tints were formed. This position has been very ably combated by the ingenious Mr. Thomas Cooper, who has written an essay on this express subject in the papers of the Manchester Society (*b*). He conceives this notion to have arisen from too hasty a perusal, or a misapprehension, of those passages of ancient authors which are quoted in support of it. Cicero, Pliny, &c. wrote of persons who were ancients in *their* days, not concerning the customs of their contemporaries, which latter are the persons termed ancients by us. Wherever mention is made of the customs of their own times, many proofs are given of the application of more colours than for-

(*b*) Memoirs of the Literary Society of Manchester, vol. iii. p. 510, edit. 8vo, 1790.

## INTRODUCTION. 15

merly. Cicero in particular says,—“ How  
“ much more brilliance is there in the  
“ beauty and *variety of the colours* in the  
“ paintings of the *moderns*, than those of  
“ the ancients (*i*) !”

PERHAPS, the more superior painters  
might employ, in the very early periods of  
the art, fewer colours than at present, be-  
cause *purples and blues* were not discovered  
till later, at least in any degree of per-  
fection (*k*). After this, a variety of new  
colours were gradually discovered; and,  
being

(*i*) “ *Quanto colorum pulchritudine et varie-*  
“ *tate floridiora sunt in picturis novis pleraque*  
“ *quam in veteribus!*” Cic. de Oratore, 3.

(*k*) Purple was prepared from a substance pro-  
duced by insects on certain plants, both of which  
are described by Ctesias; and after him by Ælian in  
his work De Nat. Animal. l. iv. c. 46.—This sub-  
stance is certainly the *cochineal*, from which our  
lake is now usually prepared.

Pliny

## 16 INTRODUCTION.

being introduced into practice, increased the stock to a considerable degree (*l*).

OF the pigments and substances used by the ancients, Mr. Cooper has given a succinct account, which he collected from the works of Dioscorides, Vitruvius, Pliny, Oribasius, Isidore and Solinus (*m*).

Pliny mentions a *blue* which in its name and origin appears to be similar to our indigo. "Ab hoc  
"maxima autoritas *Indico*: Ex Indiâ venit, arundi-  
"num spumæ, adherescente limo: cum teritur, ni-  
"grum, at in diluendo mixturam *purpureæ cæruleique*  
"mirabilem reddit." Plinii l. xxxv. c. 6.—And in the following chapter, "Indiâ conferente fluminum  
"fuorum *limum*:"—this *limum* is precisely the *mud*  
or *fecula* which subsides in the preparation of indigo from the plant anil; and might, in India, be spontaneously formed by the maceration of vegetable substances growing on the banks of rivers.

(*l*) For a list of the colours used in Pliny's time, see Plinii lib. xxxv. c. 12, et seq.

(*m*) See Manchester Memoirs, p. 530, vol. iii. 8vo, 1790.

"OF



## INTRODUCTION. 17

“ OF *white* colouring substances, the ancients had *white lead* variously prepared ; a white from *calcined egg-shells*, and preparations from *cretaceous* and *argillaceous earths*.—The moderns, in addition, have *magistery of bismuth*, little used ; and ought to have the *calces of tin* and *zinc*.

“ OF *blacks*, the ancients had preparations similar to *lamp*, *ivory*, *blue* and *Frankfort black* ; also to *Indian ink*, and *common writing ink* ; and they used what we do not, viz. the *precipitate of the black dyers vats*. *Black chalk* and *black lead* were, as I think, unknown to them.

“ THE ancients possessed a species of *vermilion*, or fine *cinnabar* ; a coarser *cinnabar* ; *red lead* ; various *reddles*, *burned* and *unburned*, apparently similar to our

## 18 INTRODUCTION:

*red ochre* ; *Venetian red* ; *Spanish brown* ; burned *terra di Sienna*, and *scarlet ochre* : they had also a substance alike in colour and in name to our *dragon's blood*. Their *minium* was not red lead, but native vermillion, or very fine cinnabar. Their red lead went under the names of *minium secundarium*, and *cerussa usta*. They had not carmine or rose-pink, nor the lakes from kermes, cochineal, or brazil ; although they certainly had the cochineal insect, and the kermes berry.

“ THE *yellow* pigments of the ancients were generically the same with our *orpiments*, *king's yellow*, *Naples yellow*, *masficot*, and the *yellow ochres* of various denominations, as well as earths tinged yellow. They did not possess turbith mineral, mineral yellow, or gamboge ; nor do they appear to have known of gall-stone as a pigment.

“ OF

## INTRODUCTION. 19

“ OF the *blue* paints, they had preparations from the lapis cyanus and lapis armenus ; perhaps also from the *lapis lazuli*, which they possessed, and which I am inclined to think a different stone from the former. *Indigo* they had ; and *bice* or smalt, for they made blue glass, but whether from some ore of cobalt or of wolfram must be uncertain—perhaps the former. They had not Prussian-blue, verditer, or litmus, which we have. We do not use the blue precipitate of the dyers vats, nor mountain blue, which they certainly employed.

“ OF *green* colours, they had *verdigrise*, *terra verte*, and *malachite* or *mountain green* : the latter is not in use among us. Sap-green and Scheele's green appear to have been unknown to them. Like us, they produced as many tints as they

C 2                      pleased

## 20 INTRODUCTION.

pleased from blue and yellow vegetables.

“ WE have no *original purples* in use : that from gold by means of tin, though very good when well prepared, is too dear, and is unnecessary. Their purple was a *tinged earth*.

“ THEIR *orange*, or *sandarach* (red orpiment), we also possess. Hence there does not appear to have been any great want of pigments, or any very material difference between the colours they used and such as we generally employ.—Perhaps the full effect of colouring may be obtained without the use of the exceeding brilliant pigments, by depending more on the proportion and opposition of tints.”

COLOURING was carried to a great degree

gree of excellence formerly, as may be clearly ascertained by the writings of various authors, who state that the Roman artists particularly trusted to it; but it is highly probable that the moderns have exceeded them in this particular branch of painting. The number of the modern colours, and their preparations have enabled them to excel their predecessors in the variety of their tints, independent of the *chiaroscuro*, which would alone go a great way towards the same excellence. All this, and a great deal more that might be urged to the same effect, will only go to prove the lamentable state of so desirable an art, which has been transmitted to posterity with scarcely one *practical rule* whereby such performances were effected. Nay, to come nearer our own times, the real method of working, and the peculiar admixture of the colours, used by



## 22 INTRODUCTION.

Rembrandt, Rubens and Vandyke, are very partially known to us, and are now rather distantly imitated than practically identified.

REMBRANDT, who was a master of colouring in the highest degree, died in 1668. Zouft, who ranked next to him, died in England about eight years after. Lely died in 1680. Reily, a disciple of Zouft, survived them both, and was the best colourist of his day. Then came Richardson, who died in 1745, and, though taught by Reily, was much inferior to him in merit. Thus we see in how short a time the art of *colouring* declined, which was in high *perfection* in the time of *Rembrandt*.

WHENEVER a discovery is made whereby the world is likely to reap advantage,  
it

## INTRODUCTION. 23

it becomes the duty of every one to promulge and extend it. For want of an open and philosophic disposition in matters of this sort, men of great abilities have dwindled into tradesmen, and have carried to their graves a store of information which, during life, was a lucrative monopoly.

By similar means, we are deprived of the knowledge of many valuable arts practised by the ancients, who from motives of jealousy or avarice excluded others from a participation of their skill. The Justinian code, for instance, contains a strict prohibition of the use of the Tyrian purple dye, except within the walls of the palace ; and although experience convinced the Eastern Emperors of the folly and impolicy of such interdicts, not all

## 24 INTRODUCTION.

their future plans could preserve this valuable art (*n*).

WHAT little information can be had concerning Rembrandt's method may be learned from M. de Piles, but it is not of the *practical* sort: " Titian and Rembrandt prepared their first lay, or grounds, nearly alike, and with colours that kindly united, and were as near to the life as possible ; on which they laid their virgin tints with light strokes of the

(*n*) To prevent the total loss, if possible, of this highly valuable dye, the Emperors obliged the descendants of the Tyrian dyers, as well as other artists, to practise the trades of their ancestors. But in time, as the families of these artists became extinct, the art became extinct also ; which shews the necessity of some act of the legislature to purchase all receipts of any real value, and record them. Vide Codex, l. xi. tit. vii. Until the promulgation of this law, it was an act of *high treason* for any private person to make use of this dye. Ibid. tit. viii.

" pencil ;

## INTRODUCTION. 25

“pencil; and thus they imitated the force  
 “and freshness of nature.—They were  
 “convinced that there were certain co-  
 “lours which destroyed each other, if  
 “they were mixed to excess; and that  
 “they should be as little shaken as pos-  
 “sible by the motion of the pencil.” If  
 M. de Piles knew the above, he might  
 have also stated the *names of the colours*,  
 and the *medium in which they were ground*,  
 &c. &c.

FROM a close inspection of the best  
 painted pictures of these great colourists,  
 it appears that the drugs and the colour-  
 ing materials were in general far better  
 prepared and more scrupulously selected  
 than at present. Many of the venders  
 of colours are not preparers of them; and,  
 being ignorant of their composition, re-  
 ceive into their shops whatever has the  
 semblance

## 26 INTRODUCTION.

semblance of excellence. Numbers of the materials are either not genuine, or are vilely sophistigated; and when ground, and tied up in bladders, are mixed with raw and impure oils. It would be well if the Royal Academy of Painting would elect censors to enforce propriety in this respect, after the custom of the College of Physicians; or at least *appoint* a few honest and well-informed colourmen; or, what is perhaps better, have a laboratory of their own, and apply the profits to the support of decayed merit, and the patronage of rising genius.

AFTER all, to recapitulate the more valuable considerations of the truly animated student, let him never rest satisfied with an *effect*, without endeavouring to discover the *cause*. He will, if grounded in philosophy, be able to account for most  
of



## INTRODUCTION. 27

of the appearances of nature; and the particular cases, which are so many exceptions, his mind will readily retain, as being peculiarly striking in themselves, and aloof from general explanation. "On the whole,"—to recur to Reynolds (*o*), "there is but one presiding principle which regulates and gives stability to every art. The works, whether of poets, painters, moralists, or historians, which are built upon general nature, live for ever; while those which depend for their existence on particular customs and habits, a partial view of nature, or the fluctuation of fashion, can only be coeval with that which first raised them from obscurity. Present time and future may be considered as rivals, and he who solicits the one must expect to be discountenanced by the other."

(*o*) Discourse, read Dec. 10, 1771,—the concluding part.



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*MATERIA PICTORIA* (p);

OR,

H I S T O R Y

OF

PIGMENTS, DRUGS, VARNISHES,

AND

OTHER MATERIALS WHICH ARE USED IN THE ART OF  
OIL PAINTING.

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A S

**ASPHALTUM.** This is a solid bituminous substance, of a deep shining black or brown colour within, with scarcely any smell till it be heated, when it emits a strong pitchy one. It is plentiful in fe-

(p) It has been thought more convenient to arrange the several words in alphabetical order; by which means any article may be instantly found out, as by a Dictionary.

veral

veral parts of Egypt, and on the surface of the Dead Sea. From France, Germany, and Switzerland, a similar bitumen is procured, differing only in its smell, which is more pitchy. Sometimes pitch itself, and the residuum after the distillation of amber, are both substituted for it, but are distinguishable from the natural bitumen.

**BLACK.** *See* the several articles—Blue Black; Frankfort Black; Ivory Black; Lamp Black.

**BLADDER OF COLOUR.** After pigments have been carefully ground in oil, and prepared for the use of the pencil, it is customary to secure them from dust and other adventitious alteration, by tying them up in pieces of bladder. By simply puncturing the bladder, so much colour as is wanted may be squeezed from the orifice,

orifice, and the remainder be preserved for a future occasion.

BLUE. *See* Indigo; Prussian Blue; Smalt; Ultramarine; Ultramarine Ashes; Verditer.

BLUE-BLACK. Of this colour the preparation is various; but the better sort is said to be made of the young stalks and tendrils of the vine charred. *See* Frankfurt Black.

BROWN. *See* Asphaltum; Brown Ochre; Brown Pink; Cologne Earth; Burnt Terra di Sienna; Umbre.

BROWN OCHRE. *See* Ochre.

BROWN PINK is the tinging part of a vegetable, precipitated on the earth of alum, and on calcareous substances, such



as cuttle-fish bone, chalk, &c. There are many methods of preparing it, among which are the following : Take of French berries, one pound ; of fustic wood, in chips, half a pound ; and of pearl-ashes, one pound. Boil them in a tin boiler, with a gallon and a half of water, for an hour ; and then strain off the tincture through flannel, while the fluid is boiling hot. Having prepared in the mean time a solution of a pound and a half of alum (which takes fourteen times its weight of water to dissolve), put it gradually to the tincture, as long as an ebullition shall appear ; wash the sediment, as in the preparation of lake ; and when it is brought, by filtering through paper and a linen cloth, to a proper consistence, dry it on boards, in square pieces.—Or, it may be made without the use of salts, by boiling two pounds of the berries in a gallon of water,

water, for two hours, and straining off the tincture through flannel. In the mean time prepare a pound and a half of cuttle-fish bone, by levigating the soft inner part with water on marble; add this to the tincture, and evaporate in balneo Mariæ (*a water-bath*) till the matter become of a stiff consistence: when the mass is well ground, let it be cut in cakes, and dried on a board.

BRUNSWICK GREEN. This is a very valuable and newly discovered colour, and is prepared by two brothers, of the name of Gravenhorst, at Brunswick. Hitherto it has been kept a secret; but it is conjectured to be a precipitate of copper which has been dissolved in tartar and water by coction, and which, by evaporation of the lixivium, is deposited in the form of a *cupreous tartar*. A similar colour is sold by Messrs. Brandram and Co.

in Sise Lane, London, which possesses many, if not all, the rare qualities of that prepared at Brunswick.

**CERUSS.** See White Lead.

**CINNABAR.** An ore of quicksilver, found in all quicksilver mines. The best is of a high red colour, brilliant, and free from gritty matters. It is a combination of quicksilver and sulphur, and when artificially prepared is termed Vermilion,—which *see*.

**COLCOTHAR OF VITRIOL.** A purple brown calx of iron, which remains after the distillation of the acid from martial vitriol:—it is also called Crocus Martis.

**COLOGNE EARTH** is of a deep brown colour. It is dug up in many parts of Germany and France; but Dr. HILL, in

his History of Fossils, observes, that it is also found near Birmingham in Warwickshire, and on Mendip Hills in Somersetshire.

COLOUR. In painting, the medium whereby the hues of nature are imitated. For these, *see* the words—Red, Orange, Yellow, Green, Blue, Purple, Brown, Black, White.

COMMON INDIAN RED. *See* Indian Red.

COMMON ORPIMENT. *See* Orpiment.

COPAL. A resin from New Spain, of which varnish is made.

DISTILLED VERDIGRISE. *See* Verdigrise.

DRYING OIL. Various are the me-

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thods of preparing drying-oils; but as paleness and limpidness are as highly necessary as a drying quality, the operation is a nice one. The following receipt is excellent: To a quart of VERY OLD nut or linseed oil add one pound of the cleanest, unadulterated litharge of silver. Let the GLASS vessel in which they are put be perfectly cylindrical, that the greasy parts of the oil, which will unite with the litharge, may subside without impediment. Shake the mass many times in a day for a week, or longer; and carefully, without mixing the greasy sediment, pour off the drying-oil for use. N. B. When drying-oils are made with heat, they are only applicable to coarse outside painting, and the darker pigments.

**DUTCH PINK.** This colour, like brown  
pink,



pink, is prepared of French berries, with this difference, that turmeric instead of fustic is admixed, and that chalk is used in lieu of cuttle-fish bone. It is also prepared, after the same manner, with starch and white lead. Its goodness consists in its being of a fine golden yellow, and very bright.

**EARTH, WHITE.** Many ingenious men have employed their talents in discovering a more wholesome, and equally cheap, pigment as white lead; and, perhaps, the finer and whiter sorts of **EARTH** might be usefully substituted. The Terra Goltbergenfis is of a white colour, which is dug up in several parts of Germany, more particularly at Goltberg, whence its name, and Strigaw, and at Lignitz in Silesia. At this time it is procured in the neighbourhood of Hasselt, in the

bishoprick of Liege, in the circle of Westphalia, where it is usually sealed with the impression of an *Eagle* and the words “ *Terra Goltbergensis.*” — Of tobacco-pipe clays there are also several sorts that appear convertible into pigments, especially one of this class which is found near Lymington in Hampshire, which is not at present turned to much use. But the earth termed *Melinum* in natural history has been ever famous in the annals of painting, being the principal white of the painters of antiquity. It is still found in the same place from whence the painters of old had it, viz. the island of Milo, called Melos by the Greeks, whence its name, and is common in all the adjacent islands. It is not quite so bright a white as white lead; but, as it never turns yellow as white lead does, it is far preferable to that article in the course of time. Besides,

sides, as most of the discolouring substances of white earths may be attributed to iron, if it were treated with marine acid, the brightness might be improved. See Hill's Hist. of Fossils, p. 45.

**ENGLISH PINK.** This is sometimes termed *light pink*, from its being of a lighter colour than Dutch pink, to which it is similar in preparation, except that a greater quantity of chalk enters the composition, to render it considerably lighter.

**FLAKE WHITE.** See White Lead.

**FRANKFORT BLACK.** This is made of the lees of wine burnt, then washed in water, and ground in mills for that purpose, together with ivory or peach-stones burnt. It makes the principal ingredient in the rolling-press ink; and is generally

brought from Frankfort, Mentz, or Strasbourg, in lumps. The French also prepare it, and theirs is far preferable.

**GLAZING.** A term used by artists to express the application of a thin superficial coat of transparent colours. It is generally practised in the shades; and the colour is mixed with *meggellup*.

**GREEN.** See Brunswick Green; Prussian Green; Scheele's Green; Terra Verte; Verdigrise, common and distilled.

**GREEN, BRUNSWICK.** See Brunswick Green.

**GREEN, PRUSSIAN.** See Prussian Green.

**GREEN, SCHEEL'S.** See Scheele's Green.

HAIR



HAIR PENCIL. *See* Pencil.

INDIAN RED. There are two sorts, viz. the common and the real. Common Indian red is no other than the ochre or colcothar left after the distillation of the acid from martial vitriol, well washed from the salts, and ground. Real Indian red is a natural ochrous earth brought from the island of Ormus, in the Persian Gulph, and called by some writers Terra Persica. In general it may be observed, that the calces of iron may be made to appear either purple or red, according to the manner in which the calcination is performed. Various paints are kept in the shops under different names, which differ only from each other in some trivial circumstances, — such as: Scarlet Ochre; Spanish Brown; Indian Red; Venetian Red.

INDIGO



INDIGO is a blue fecula obtained by maceration from the plant ANIL. The very best sort comes from Spanish America; but within these few years a vast quantity has been brought from Bengal, which equals, in many samples, the finest that has been produced on the globe. It is not so well calculated for oil as for water: it is, therefore, applied in great quantities to the purposes of dyeing.

IVORY BLACK. If this colour were really prepared from the *rappings of ivory*, which in truth it ought to be, it is a very beautiful jet black; but unhappily it is prepared only from *bones*, which by no means equal it in splendour, although they may be considerably cheaper. It is a very bad dryer, and requires a considerable admixture of *sugar of lead*.

KING'S

**KING'S YELLOW.** This is an orpiment, or preparation of arsenic and sulphur, of an extreme bright colour. It will stand well, if kept unmixed and by itself; but, if it be mixed with lead and some other colours, it flies off or changes. It may be obtained from common orpiment by sublimation.

**LAKE**, so called from gum-lacca, from which it was at first prepared, is a very beautiful tinge of red, purple, or yellow colouring substances precipitated on the earth of alum. The red and purple lakes are prepared from cochineal, madder, and kermes berries; the yellow sort, from the curcuma or turmeric-root. So nice are the miniature-painters in water-colours in the procuration of lake, that great prices are given for it. The great complaints made against the red lake are, that it is *too purple,*

*ple*, and too apt to fade and vanish. Could an *unadulterated scarlet lake*, that would stand the test of time, be philosophically prepared, such a colour would accumulate fame and fortune on the ingenious artist who invented it.

**LAMP-BLACK.** This colour is the foot of oils, resins, and other inflammable substances collected from lamps. At present, so great is the consumption, a process of a much greater extent is effected. For instance, in Norway and Sweden it is frequently obtained from the dregs and strainings of resin, together with chips of the wood and bark of the pine, burnt in ovens of a peculiar construction. Similar modes are now probably practised in England, where vast quantities are made for the painting of the bends and masts of ships; since it has been discovered, that  
lamp

lamp-black mixed with tar or oil is a perfect non-conductor, and has proved a preservative from lightning, by repelling the electric matter from those parts which are coated with it.

LEAD, RED. *See* Red Lead.

LEAD, SUGAR OF. *See* Sugar of Lead.

LEAD, PRECIPITATE OF. *See* White Precipitate of Lead.

LEAD, WHITE. *See* White Lead.

LIGHT PINK. *See* English Pink.

MASTIC, or MASTICH. A transparent resin from the lentisc tree.

MASTICOT, or MASSICOT, is white  
lead



lead calcined till it assume a yellowish colour.

**MEGGELLUP.** A term used by artists to express a composition or mixture of turpentine, mastic varnish, and linseed oil, with which they apply their *glazings*. Others prepare it of one part of genuine mastic varnish, and two parts of pale drying oil. When the two ingredients are quickly shaken together they will form a clear jelly, which will be found extremely serviceable in many parts of painting.

**MINIUM.** See Red Lead.

**NATIVE CINNABAR.** See Cinnabar.

**NAPLES YELLOW.** This colour was for a long time supposed to be a preparation of arsenic, but it is now well known  
to



to contain lead. Dr. Hill in his *Hist. of Fossils*, p. 56, is highly mistaken as to the nature of this material. He says that it is a bolar earth, impregnated with a ferruginous calx, very beautiful, of a bright and elegant yellow, between a gold and saffron colour, and of a very loose, porous, spongy and shattery texture. It is found, as he says, in some parts of Italy, sometimes on the surface of the earth, at other times very deep.—The truth is now, however, discovered by M. Fougereux, who has demonstrated that it is made by art. The person who prepares it at Naples, scrupulously conceals every circumstance that might lead to a discovery of its nature and preparation. It contains, by chemical analysis, an absorbent earth, a vegetable acid united with lead, an aluminous and ammoniacal salt, and a calx of antimony. Accordingly, on mixing together intimately twelve ounces  
of

of white lead, one of alum, one of sal ammoniac, and three of diaphoretic antimony, in an unglazed earthen pan, covered over, and exposing it to a moderate heat for the space of eight hours, he obtained a substance of the same colour and the same properties with Naples yellow, or *Giallolino*, as it is there called. See Hist. Acad. Sciences, 1766.

NOTTINGHAM WHITE. See White Lead.

OCHRE. The name of a large genus of earths, used principally by the painters. The most common kinds are the red and yellow, though there are brown, blue and green. Of the yellow, Dr. Hill describes eleven species; of the red, the same number; of the brown, two; of the blue and green, one species each. Ochre is a ferruginous

ruginous earth, or ore of iron: the specimens of such as are dark may be brightened by calcination. They appear to be produced by the decomposition of martial pyrites, which consist of sulphur and iron. By the action of air and water the sulphur becomes acidified, and forms vitriol, and the iron is deposited on calcareous earths which seize the acid. Iron is frequently extracted from this ore.

OILS. The oils usually applied to the purposes of the painter are, linseed, nut, and poppy oils, and the oil (improperly so termed) of turpentine. The paler and more limpid these oils are, the better, provided no heterogeneous matters are applied to them to render them so. Experience has proved, that *great age* is required to render *seed-oils* valuable, as they then acquire a drying quality, and lose that turbid ap-

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pearance

pearance which when new they invariably possess.

OKER. *See* Ochre.

ORANGE. *See* Orange Lake; Red Orpiment.

ORANGE LAKE. This may be prepared by boiling four ounces of the best Spanish anotto, and one pound of pearl-ashes, for the space of half an hour, in one gallon of water. Strain the tincture, and mix it gradually with a solution of a pound and a half of alum in six quarts of water, desisting when no ebullition ensues. Treat the sediment as is usual in preparing common lake, and dry it in square bits, or round lozenges.

ORPIMENT is a combination of the calx of arsenic with sulphur, and is of a yellow colour. By an exposure to a great degree

degree of heat, the above combination assumes a *red* colour, which is then termed red orpiment, or realgar. M. Chaptal and M. Bucquet comparé this operation with the conversion of mercurial æthiops into cinnabar, or vermilion.

PALETTE, among painters, is a little oval table, or piece of wood, very thin and smooth; on and round which the requisite colours are placed, that they may be ready for the pencil. It has no handle, but in lieu thereof a hole at one end, through which the thumb is thrust, to keep it firm in the hand.

PATENT YELLOW. This colour, for which the ingenious Mr. Turner has a patent, is prepared by triturating red lead and common salt together in a mortar, and then exposing them in a crucible (made of tobacco-pipe clay) to a certain heat. The



salt is decomposed; the marine acid uniting with the calx of lead forms the patent yellow; and the basis of the salt, which must be carefully washed out, is the mineral alkali, of so much consequence in the soap, glass, and other manufactories.

PENCIL. An instrument used by painters for the application of their colours. They are of various kinds, according to their uses: the most usual are of badgers' and squirrels' hair, of swans' down, and boars' bristles. These last are bound to sticks, and are more generally termed *brushes*; the others are included in the barrel of a quill.

PRUSSIAN BLUE. A combination of iron with a substance of the nature of an acid, distinguished by the name of *acid of Prussian blue*. Various theories have been proposed respecting this colour, by  
Geoffroy,

Geoffroy, Macquer, Sage, and others, all depending on the received knowledge of chemistry of that period: but Scheele and Berthollet have thrown much light on this subject, and have converted the old term of *phlogisticated alkali* into *Prussian acid*. —To make this article, on a small experimental scale, any animal matters, such as blood, the raspings of horn, clippings of skins, &c. &c. are converted into charcoal, by heating them in a covered vessel, together with an equal weight of alkali. Lixivate this coal in water; then strain it, and evaporate to a degree of strong concentration. This lixivium is then to be gradually admixed to a solution of two ounces of martial vitriol and four ounces of alum, when a blueish deposit is formed, which is rendered more intensely blue by treatment with marine acid. Manufacturers proceed on a much larger scale.

PRUSSIAN GREEN. This is a colour seldom employed, and is made by some admixture during the operation of making Prussian blue.

PURPLE. See Colcothar of Vitriol; Purple Lake; *True* Indian Red.

PURPLE LAKE. See Lake.

REALGAR. See Orpiment.

RED. See, *Burnt* Terra di Sienna; Cinnabar; *Common* Indian Red; Rose Pink; Red Lake; Red Lead; Scarlet Ochre; Spanish Brown; Venetian Red; Vermillion.

RED LEAD is a calx of lead of a vivid orange-red colour, which colour it acquires by a slow calcination in a reverberating furnace. From Holland, for the most part, the red lead in commerce is brought;

brought: — it is frequently termed Minium.

RED OCHRE. *See* Ochre.

RED ORPIMENT. *See* Orpiment.

ROSE PINK. This is a very beautiful red colour, but is so perishable as to be little esteemed. It is made of chalk, coloured with a decoction of Brazil wood, heightened by an alkaline salt.

SACRUM. A vulgar and corrupted mode of expressing Saccharum Saturni, or Sugar of Lead.

SANDARACH. A name sometimes given to a combination of arsenic and sulphur.

SANDARACH GUM. Improperly so called, because it is a resin. It is pos-

posed of considerable transparency, and is therefore used in varnish. It is obtained from the juniper tree, in which it occupies a place between the bark and the wood,

SCARLET OCHRE. *See* Ochre.

SCHEELE'S GREEN. To one pound of blue vitriol dissolved in a sufficient quantity of water, add immediately one pound of purified alkali, and five ounces and a half of pulverized white arsenic, dissolved previously in eight pounds of boiling water: the precipitate, arising from the mixture of these two solutions, is to be well washed or elixated, and dried,

SMALT is the pulverized blue glass of cobalt. By us it is generally termed powder-blue, and is used with starch, to give a beauty to fine linens.

SPANISH BROWN is an ochrous  
ruddy



ruddy earth, which was formerly supplied from abroad, as its name imports, but is now dug up in several parts of England.

**SPIRIT OF TURPENTINE.** This is an essential oil, which has given rise to the improper name of oil of turpentine; but it is not of an oleaginous nature. By distillation in balneo Mariæ (a chemical water-bath) the spirit rises from the turpentine, and leaves a residuum of a yellow colour, termed yellow resin, or rosin,

**SPONGE-PENCIL.** Among the ancients, pencils of sponge were used, by which the foaming of the sea, and other representations of a similar nature were most ingeniously effected. Hence, doubtless, the story of the painter, who not being able to express the foam of a war-horse, succeeded by *dashing the sponge* at the picture.

**SUGAR**

**SUGAR OF LEAD.** Lead and its calces may be dissolved by the acetous acid, and will afford a crystallizable salt, called *sugar of lead* from its extreme sweetness. This, like all the preparations of lead, is a deadly poison. It has the property of rendering oils thicker, and causing them to dry more rapidly. Litharge, which is a preparation of lead, is used with the same intention in drying oil.

**SWEETENER.** A term used by some artists for a hair-pencil, or brush, with which the abrupt edges of colours are softened and blended together, as in the operation of glazing, &c.

**TERRA DI SIENNA.** This is a ferruginous earth, and capable of becoming red by calcination. It is a highly valuable colour to the portrait-painter, for describing  
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ing the warm reflected lights of the face, neck, &c.

**TERRA VERTE.** This is a native earth, of a green colour, which it probably receives from an admixture of copper. When well levigated, for it is of a gritty texture, it is very durable, though not bright.

**TURPENTINE.** This is a resinous inspissated juice extracted from trees of the fir kind. Four sorts are distinguished by medical writers; but the most common, from which the spirit of turpentine is made, is obtained from the *pinus sylvestris* of Linnæus.

**TURPETH MINERAL, or TURBITH MINERAL,** is but little used in painting, though it seems richly deserving of notice. Its fine yellow colour is likely to possess durability, and is therefore preferable to  
king's

king's or Naples yellow. It is prepared by mixing crude mercury in a retort with equal parts of vitriolic acid, and subjecting these to an intense heat, till the mercury is reduced to a white mass. Let this be afterwards elixated with water, and it will assume a brimstone-yellow hue.

ULTRAMARINE. Its great price hinders it from being much used, although it is by far the best and most durable blue colour known. Prussian blue has of late been much used in lieu of ultramarine; but it is a sad substitute, it being less durable, and less brilliant in its primitive state. Its preparation consists in first calcining the lapis lazuli in a crucible, then grinding it very fine on a porphyry; then mixing it up with a paste made of wax, pitch, mastich, turpentine and oil; and lastly, washing the paste well in clear water, to  
separate

separate the colouring part from the rest, which precipitates to the bottom, in form of a subtile, beautiful, *blue* powder. The water is then poured off, and the powder at bottom is dried in the sun; and is the true *ultramarine*.—To know whether it be pure and unmixed;—put a little of it in a crucible, and on heating it red-hot, if the powder has not changed its colour, it is certainly genuine: on the contrary, if any change be perceived, or any black spots appear, it is either spurious or adulterated.

ULTRAMARINE ASHES. This is the name of a pigment which is the residuum of the lapis lazuli after the preparation of ultramarine. These ashes cannot possess the beauty and value of the first colour, as the colouring particles are mixed with those of another kind, which are red.

Their



Their sophistication may be detected after the manner in the preceding article.

UMBRE. This is a fossile substance, of a brown colour, which takes its name from Umbria, the ancient name of the duchy of Spoleto in Italy, whence it was first obtained. Dr. Hill and Mr. Da Costa consider it as an earth of the ochre kind, several large masses having been thrown up in digging on Mendip Hills in Somersetshire, and in the county of Wexford in Ireland. It is found in Egypt, Italy, Spain and Germany, as also in Cyprus; but it is brought into England principally from different parts of the Turkish dominions. This substance, when burnt, makes a good shade for gold. It need only be put into the naked fire in large lumps, which should not be taken out till they be thoroughly red-hot.

**VARNISH.** A viscid, glossy liquor, used by painters, gilders, and various other workmen, to give a gloss and lustre to their works, as also to defend them from various accidents, from weather, dust, &c. A more particular treatise on varnish will be given by itself; it will be needless, therefore, to dilate further here.

**VENETIAN RED.** This differs in nothing from red ochre, or the colcothar of vitriol well calcined. *See* Indian Red.

**VERDIGRISE.** Copper corroded, and reduced to a very beautiful green colour, or rust, by the vinous acid, is termed verdigrise. Montpellier is the principal place of its manufacture, it being the capital of Languedoc, where the vine is propagated to a great extent. M. Monet gives the following method of preparing verdigrise:

verdigrise :—Vine-stalks well dried in the sun are steeped during eight days in strong wine, and again dried. After this they are put into earthen pots, and wine is poured upon them ; the pots being closely covered. When the fermentation, which in summer takes place in eight days, and in winter somewhat later, has advanced, the stalks are to be taken out of the pots. They are then to be drained for a while, and alternate layers of stalks and plates of Swedish copper are to be arranged in earthen pots closely covered. After three or four days the plates will be corroded ; when they are to be taken out, and left in a cellar, and are occasionally to be wetted with water, or weak vinegar. This operation of wetting and drying being repeated three times, the rust may be scraped off for sale. Other methods are practised elsewhere, by ordinary vinegar ;

but it has been observed that, if the acid be not *vinous*, the verdigrise will not have that unctuosify so desirable, and even necessary, in painting. Great quantities are now made at Grenoble, since the vulgar prejudice in favour of the cellars of Montpellier has been done away.

VERDITER is a blue colour, prepared with chalk, and copper precipitated from aqua-fortis. It is used by painters in water, and is principally consumed by the paper-stainers.

VERMILION. Under the article Cinnabar it was stated that vermilion was no other than a factitious imitation of that colour, the component parts consisting of quicksilver and sulphur. M. Beaumé gives the following process as a good one: Make a perfect *æthiops mineralis* by tri-

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turing

turating two parts of sulphur with one of quicksilver. Take of this æthiops any quantity, and expose it to the fire in a matrafs; a more intimate combination will take place, and the mixture will sublime to the upper part of the vessel, in form of a very deep reddish-brown mass. To make it more perfect, one or two more sublimations are necessary. In the shops, this is termed *factitious cinnabar*; but by grinding it very fine, with a mixture of clear urine, and a little saffron as some suppose, the intenseness of the colour is somewhat lost, and it assumes the name of *vermilion*.

**WHITE.** Flake-white and white lead are the two principal colours used in oils. Though these are called the best preparations of lead, yet some others exist under the names of cerufs and Nottingham  
ham



ham white, which will be explained in the following article.

WHITE EARTH. *See* Earth, White.

WHITE LEAD. The preparation of this pigment has become a distinct trade, and is practised in many parts of this kingdom. The author of the Chemical Dictionary, M. Macquer, gives the following description of the process: Leaden plates rolled spirally, so that the space of an inch shall be left between each circumvolution, must be placed vertically in earthen pots of a proper size, containing some good vinegar. These leaden rolls ought to be supported in the pots, that they do not touch the vinegar, but that the vapour of this acid may circulate freely betwixt the circumvolutions. These pots are to be covered, and placed in a bed of

dung, or in a sand-bath, by which a gentle heat may be applied. The acid of vinegar, being thus reduced into vapours, easily attaches itself to the surface of these plates, penetrates them, and is impregnated with this metal, which it reduces to a beautiful white powder, called *ceruss*. When this powder is ground, and fitted for painting, it is termed *white lead*.—*Flake-white* and *Nottingham-white* are also preparations of lead, and are nearly the self-same thing. Through the communication of a philosophical gentleman of veracity, the writer of this is enabled to state—that the principal difference between the process of making *white lead* and *Nottingham-white* consists in the use of *alegar* instead of *vinegar*. From a very severe trial he made of both the white colours, the preference is decidedly in favour of *Nottingham-white*:—he painted

painted the back-board of a picture frame, one half with common *white lead*, the other half with *Nottingham-white*. The picture in its frame was hung up as usual, and was not disturbed for several months; at the end of which time the picture was removed, and the side painted with *Nottingham-white* was nearly as white as ever, while the other half was changed to a deep yellow.—If a conjecture may be offered on the superior efficacy of *alegar* over vinegar in the preparation of a white colour from lead, it is—that *alegar* contains more of a *vinous* acid than common vinegar; for, independent of the greater quantity of saccharine matter which enters into its composition, it possesses the virtue and spirit of the *bop*, a peculiarity unknown to the common vinegar. That a *vinous* acid is superior to any other is well known, as the verdigrise made at Mont-

pellier and Grenoble from vine-stalks acidified in wine, is better, and sells at a higher price, than that which is made of ordinary vinegar. See the article Verdigrise.

WHITE PRECIPITATE OF LEAD. Although the principal intention of this "*History of Pigments, &c.*" is to give a more general knowledge to the student in OIL-painting, yet the more curious artist will indulge us in giving the following description of a water-colour, which is highly valuable to the painter in miniature, and may be found capable of great improvement.

If a small quantity of strong nitrous acid be poured upon *litharge* (which see), the acid unites itself to the metal with considerable effervescence and heat. Some

water being now poured on, and the glass vessel containing the mixture shaken, a turbid solution of the litharge is made. If a small quantity of acid of vitriol be now added, it throws down a beautiful *white precipitate*; and the acid of nitre being left at liberty to act upon the remainder of the litharge, begins anew to dissolve it with effervescence. When it is again saturated, which will be known by the discontinuance of the bubbles, more acid of vitriol is to be dropped in, and a white precipitate is again thrown down. If any of the litharge remains undissolved, the nitrous acid being set at liberty a second time, attacks it as at first; and by continuing to add acid of vitriol, the whole of the litharge may be converted into a most beautiful and durable white. Unfortunately this colour cannot be used in OIL, though in water it seems superior



to any. N. B. If the process be well managed, an ounce of nitrous acid may be made to convert several pounds of litharge into a white of this kind.

It has been strongly recommended to paper-stainers, and others who use water-colours in large quantities, to prepare their lakes, and the colours now prepared of chalk, on the basis of the above precipitate of lead.—For instance: if the colour required be a very fine one, suppose from cochineal, the colouring matter is to be first extracted by spirit of wine, without heat. When the spirit is sufficiently impregnated, it is to be poured by little and little upon the calx: the spirit soon evaporates, and leaves the calx coloured with the cochineal. More of the tincture is then to be poured on, rubbing the mixture constantly; and thus, by proper management,

nagement, many beautiful colours, not inferior to the best carmine, may be prepared.—When only a small quantity of colour, for the more exquisite touches of the miniature painter, is required, we would recommend the process to be conducted on the basis of *white precipitate*, or *calx of tin*, pursuing the same method of rubbing in the colouring tincture as when *white precipitate of lead* is used. If, instead of cochineal, Brazil-wood, turmeric, logwood, &c. be substituted, different kinds of red, yellow, and purple may be produced.—Aqueous decoctions, in lieu of spirituous extracts, may be used for coarser work ; but the process is more tedious, from the length of time required to evaporate the water. *Art* may, however, be employed here to assist the evaporation, provided the heat be low and gradual ; and then the quantity of colour prepared

prepared at one time might well answer the operator's trouble.

**YELLOW.** *See* Dutch Pink; English Pink; King's Yellow; Masticot; Naples Yellow; Orpiment; Patent Yellow; Terra di Sienna; Turpeth Mineral; Yellow Ochre.

**YELLOW OCHRE.** *See* Ochre.

PRACTICAL RULES  
FOR  
PAINTING IN OIL COLOURS.

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THE following rules are derived from the observations and practical experience of the late ingenious Mr. Bardwell, so well known and admired, at a period previous to the formation of the Royal Academy. Time has evinced the truth of his method, and has established certain principles on which the student may safely rely. Such great discoveries, however, have been made, since his time, in the preparation

## 76 PRACTICAL RULES FOR

preparation of some colours \*, as to call forth the powers of modern ingenuity to apply them. Much is left to be done; and from the present flourishing state of the Royal Academy, it is to be hoped that the day will come when modern genius shall eclipse the productions of former ages.

ON a comparison with Mr. Bardwell's work, it will be found that many alterations and corrections have been made; but these chiefly consist in the striking out many redundancies, and errors that had crept into it:—the PRINCIPLES are everywhere scrupulously adhered to.

\* Viz. Brunswick Green, Patent Yellow, Scheele's Green, &c.



*List of the principal COLOURS used in the Flesh, from which all the Tints are made.*

1. FLAKE-WHITE\*, or FINE WHITE, is the very best white we have. This colour should be ground with the finest poppy oil that can be made. At present our white is bad, only on account of the oil, which is not really poppy. White is a friendly working colour, and comes forward with yellows and reds, but retires with blues and greens. It is the nature of all whites to sink into whatever ground they are laid on; therefore they should be laid on *white grounds*.

2. IVORY BLACK is the best black we have: it is a colour which sympathizes

\* See the article *White Lead* in the *Materia Pictoria*.

## 78 PRACTICAL RULES FOR

and mixes kindly with all the other. It is a true shade for blue. Ivory-black and a little Indian red make the best general shadow-colour that can be. It is ground with linseed oil, and used with drying oil and sugar of lead Black is a cold, retiring colour.

3. ULTRAMARINE is the finest blue in the world. It is a tender, retiring colour, and never glares; and is a beautiful glazing colour. It is used with poppy oil.

4. PRUSSIAN-BLUE is a very fine blue, and a kindly working colour. It is ground with linseed oil, though nut oil is more proper. It should never be used in the flesh, but in the green tint and in the eyes.

5. LIGHT OCHRE is a friendly mixing colour, and of great use in the flesh. It  
is

## PAINTING IN OIL COLOURS. 79

is usually ground with linseed oil, but nut oil is better. All yellows are strengthened with reds, and weakened with blues and greens.

6. LIGHT RED (light ochre burnt) and white, mixed, produce the most perfect flesh colour that can be made. It is a beautiful, clean, kindly working colour, but too strong for the white, and therefore will grow darker. It should be ground and used with nut oil.

7. VERMILION made of the true native cinnabar only should ever be used. It will not glaze; but is a fine colour when glazed upon. It is ground with linseed oil, and should be used with drying oil.

8. CARMINE is the most beautiful crimson that can be: it is a middle colour between

## 80 PRACTICAL RULES FOR

tween lake and vermilion; is a fine working colour; and glazes delightfully. It should be ground with nut oil, and used with drying oil.

9. LAKE is a tender, sympathizing, deep red; but of no strong body; therefore it should be strengthened with Indian red. It is the best glazing colour that can be used. It is ground with linseed oil, and used with drying oil.

10. INDIAN RED is a strong, pleasant-working colour; but will not glaze well; and, when mixed with white, falls a little. It is ground and used as the lake.

11. BROWN PINK is a fine glazing colour; but of no strong body: In the flesh it should never join, or mix with the lights; because this colour and white antipathize

## PAINTING IN OIL COLOURS. 31

tipathize, and mix of a warm dirty hue ; for which reason their joinings should be blended with a cold, middle tint. In glazing of shadows, it should be laid before the other colours that are to enrich it. It is one of the finishing colours, and therefore should never be used alone in the first painting. It is strengthened with burnt umbre, and weakened with terra verte; ground with linseed oil, and used with drying oil.

12. BURN'T UMBRE is a fine warm brown, and a good-working, strong colour. It is of great use in the hair, and mixes finely with the warm shade.



## 82 PRACTICAL RULES FOR

*List of the principal TINTS that are absolutely necessary for painting Flesh; all which are made from the principal Colours just enumerated.*

No. 1. **L**IGHT RED TINT is made of light red and white. It is the most kind and best conditioned of all colours, for the general ground of the flesh. With this colour and the shade tint (No. 9.) we should make out all the flesh, like *claro obscuro*, or *mezzotinto*. We should also remember, that this colour will grow darker; because it is in its nature too strong for the white; therefore we should improve it; that is, mix some vermilion and white with it, in proportion to the fairness of the complexion. And though it is thus mixed, yet it will be called light-red tint in all the course of the work;

## PAINTING IN OIL COLOURS. 83

because it should not have the vermilion tint confounded with it, as if there was no difference.

No. 2. VERMILION TINT is only vermilion and white, mixed to a middle tint. It is the most brilliant light-red that can be: it agrees best with the white, light-red, and yellow tints.

No. 3. CARMINE TINT is carmine and white only, mixed to a middle tint. It is, of all colours, the most beautiful red that can be for the cheeks and lips: it is one of the finishing colours, and should never be used in the first painting, but laid upon the finishing colours, without mixing.

No. 4. ROSE TINT is made of the red shade (No. 10.) and white mixed to a middle degree, or lighter. It is one of the

#### 84 PRACTICAL RULES FOR

clear, ~~off~~ and most delicate tints that can be used in the flesh, for clearing up the heavy dirty colours; and therefore, in changing, will sympathize and mix kindly.

No. 5. YELLOW TINT is often made of Naples yellow and white; but it is made also of light ochre and white, which is a good working colour. Remember the ochre is too strong for the white; therefore we should make a little allowance in using it. It follows the light-red tints, and should always be laid before the blues. If we lay too much of it, we may recover the ground it was laid on with the light red-tints.

No. 6. BLUE TINT is made of ultramarine and white, mixed to a lightish azure. It is a pleasant working colour: with it we should blend the gradations. It follows the yellows; and with them it makes

## PAINTING IN OIL COLOURS. 85

makes the greens; and with the red it produces the purples. No colour is so proper for blending down, or softening the lights *into keeping*.

No. 7. LEAD TINT is made of ivory black and fine white, mixed to a middle degree. It is a fine retiring colour; and therefore is of great use in the gradations, and in the eyes.

No. 8. GREEN TINT is made of Prussian blue, light ochre, and white. This colour will dirty the lights, and should be laid sparingly in the middle tints. It is most used in the red shadows, where they are too strong. It is of a dirty antipathizing nature.

No. 9. SHADE-TINT is made of lake, Indian red, black, and white, mixed to a

## 86 PRACTICAL RULES FOR

beautiful murrey colour, of a middle tint. This is the best colour for the general ground of shadows; for which reason it is here called the shade tint: it mixes with the lights delightfully, and produces a pleasant clean colour, a little inclined to the reddish pearl. As all the four colours of its composition are of a friendly sympathizing nature, so consequently this will be the same; and therefore may be easily changed, by the addition of any other colours.

No. 10. RED-SHADE is nothing but lake and a very little Indian red. It is a charming working colour, and a good glazer: it strengthens the shadows on the shade tint; and receives, when it is wet, the green and blue tints agreeably. It is a good ground for all dark shadows.

No. 11.



## PAINTING IN OIL COLOURS. 87

No. 11. WARM-SHADE is made of lake and brown pink, mixed to a middle degree: It is a fine colour for strengthening the shadows on the shade tint, when they are wet or dry. We must take care that it does not touch the lights, because they will mix of a dirty snuff-colour; and therefore should be softened with a tender cold tint..

No. 12. DARK-SHADE is made of ivory black and a little Indian red only. This colour mixes very kindly with the red-shade, and sympathizes agreeably with the middle tints in the dead-colouring. It is a charming glazing colour for the eye-brows and darkest shadows. It is, of all, the most excellent shadow-colour, and one of the finest working colours we have.

# FIRST PAINTING.

*The Colours and Tints that are necessary  
for the First Painting of the Flesh are,*

**FINE White.**

**Light Ochre . . . . . and its two Tints.**

**Light Red . . . . . and its two Tints.**

**Vermilion . . . . . and its Tint.**

**A Tint made of Lake, Vermilion, and White.**

**Rose Tint.**

**Blue Tint.**

**Lead Tint.**

**Green Tint.**

**Half-shade Tint—made of Indian Red,  
and White.**

**Shade Tint.**

**Red Shade.**

**Warm Shade.**

**THE finishing palette for a fine complexion**

## PAINTING IN OIL COLOURS. 89

plexion requires six more ; viz. Carmine and its Tint, Lake, Brown Pink, Ivory Black, and Prussian Blue.

THE first painting, or dead-colouring, is divided into two parts : the first may be called the *first lay*, or *ground* ; the second, the *laying on the virgin tints*.

THE first lay of colours consists of two parts : the one is the work of the shadows only, and the other that of the lights,

THE work of the shadows is to make out all the drawing, very correctly, with the shade-tint, in the same manner as if it was to be done with this colour only ; and remember to drive or lay the colour sparingly. The lights should be all laid in with the light-red tint, in different degrees, as we see them in nature : these

two

## 90 PRACTICAL RULES FOR

two colours united produce a clean, tender, middle tint ; for, mixing with the shade-tint, they turn to a pearly hue ; and by strengthening them with the light-red, we may work to a very good resemblance. In uniting the lights and shades, we should use a long softener \*, about the size of a large swan's quill ; which will help to bring the work into character, and leave the colouring more delicate ; then go over the darkest shadows with the red or warm shade, which will finish the first lay.

THE warm shade being laid on the shade-tint, improves it to a warmer hue ; but if laid instead of the shade-tint, it will dirty and spoil the colours it mixes with ; and if the red shade be laid first, instead of the shade-tint, the shadows would then appear

\* See the article SWEETENER in the *Materia Pictoria*.

## PAINING IN OIL COLOURS. 91

too red and bloody. Therefore, notwithstanding these two colours are the best that can be for the shadows, yet they are too strong to be laid alone; which is a proof of the great use and merit of the shade-tint. Here we may observe, that the shade and light-red tints are so friendly and delicate in their natures, that they will not dirty, though we are continually changing them. How proper then, and agreeable to our purpose, are they, for making the most principal part of the likeness, when in altering and changing they always produce a clean colour of the inviting pearly hue !

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### THE SECOND PART OF THE FIRST PAINTING.

In order to finish the first painting, improve



prove the reds and yellows to the complexion, and after them the blues ; observing, that the blues on the reds make the purple, and on the yellows produce the green. The same method is to be understood of the shadows ; but be sure to leave them clean, and not too dark : therefore allowance should be made in their grounds with the light-red ; because glazing them will make them darker. When the cloth is of a dark or bad colour, there must be a strong body of colour laid all over the shadows, such as will not sink into the ground, but appear warm, and a little lighter than the life, so that it may be of the same forwardness to finish, as if it had been a light ground. Therefore the business of dead-colouring is, that we leave it always in the same order for finishing, though the colour of the cloth be quite the reverse.

It

## PAINTING IN OIL COLOURS. 93

It is proved by experience, that the grounds of shadows, in what we call the dead-colouring, should be such as will support the character of the finishing colours; which ground must be clean, and a little lighter than the finishing colours; a little lighter, because the *finishing* of shadows is *glazing*; and no other method but glazing can leave such brilliancy and beauty as they ought to have. For, glazing the shadows in the *first painting* is not so proper as laying a body of shadow colours, that are very near to the life, though a little lighter. These may be glazed and touched upon, when dry, with a great deal of ease: but if we begin the first painting with glazing, we shall find it will stare, and be of no use; and the solid colours, which are laid on it, will look heavy and dull. Therefore all shadows and colours, that are to be glazed, should be  
done

done with colours of a clean solid body ; because the glazing is more lasting, and has the best effect, on such colours. Remember to leave no roughness ; I mean such as will appear rough, and interrupt or hurt the character of the finishing colours ; which, by examining the work whilst it is wet, with a soft tool, or, when it is dry, with a knife, may be avoided, as it will easily take off the knots and roughest parts.

THE light-red and white improved is superior to all other colours for the first lay or ground ; which should be always done with a full pencil of stiff colour, made brighter than the life, because it will sink a little in drying. The greater the body and quantity of colour, and the stiffer it is laid, the less it will sink. Every colour in drying will sink, and partake, in proportion

portion to its body, of the colour it is laid on: therefore all the lights of the flesh, if not laid on a light ground, must consequently change a little from the life, if there is no allowance made. The shade-tint for the shadows should fall into the rose tint, as the complexion grows delicate; all which should be lightly united, with a soft long-pointed tool, to the lights, making out the whole like mezzotinto.

I BELIEVE the great masters very seldom sweetened or softened the colours; but in uniting the first lay, they were very careful in preserving the brightness of their colours, and therefore did not work them below the complexion. For, to force or keep up a brilliancy in the grounds can only be done with the whites, reds, and yellows; which method will make up for the deficiency of the white grounds:

therefore

## 96 PRACTICAL RULES FOR

therefore, the first painting should be left bright and bold, and the less the colours are broken the better. We should forbear using any colours that will prejudice them, and be contented to add what is wanted the next painting; where if we fail, a clean rag will restore the first ground.

SECOND



SECOND PAINTING.

THE Second Painting begins with laying on the least quantity that can be, of poppy oil; then wipe it almost all off, with a dry piece of a silk handkerchief.

THE second painting is also divided into two parts: one is called the first lay of the second painting; which is scumbling the lights and glazing the shadows: the other, finishing the complexion with the virgin tints, and improving the likeness, as far as can be, without daubing.

SCUMBLING is going over the lights, where they are to be changed, with the light-red tints, or some other of their own colours, such as will always clear and improve the complexion, with short stiff

H pencils;

## 98 PRACTICAL RULES FOR

pencils ; but such parts only as require it ; otherwise the beauty of the first painting will be spoiled, and we make double work.

THE light-red tint improved, is the very best colour that can be for scumbling, and improving the complexion in general. Where the shadows and drawing are to be corrected, we should do it with the shade-tint, by driving the colour very stiff and bare, that we may the easier retouch and change it with the finishing tints. Some parts of the shadows should be glazed with some of the transparent shadow-colours, such as will improve, and come very near to the life ; but be sure not to lay on too much of it, for fear of losing the hue of the first painting, the ground of which should always appear through the glazing. Be very careful, in uniting the lights and shades, that they do

## PAINING IN OIL COLOURS. 99

not mix dead and mealy; for the more the lights mix with the shades, the more mealy those shades will appear. Thus far the complexion is prepared and improved, in order to receive the virgin tints and finishing touches.

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### THE SECOND PART OF THE SECOND PAINING,

Is to go over the complexion with the virgin tints: these are the colours which improve the colouring to the greatest perfection, both in the lights and shadows. This should be done in the same manner as we laid them in the second part of the first painting; that is, with the reds, yellows, and blues; blending them with delicate light touches of the tender middle tints, without softening. We should leave

100 PRACTICAL RULES FOR

the tints and their grounds clean and distinct, and be content to leave off whilst the work is safe and unfullied, leaving what is farther required for the next sitting; for, in attempting the finishing touches before the other is dry, we lose the spirit and drawing, and dirty wherever we touch.

THE THIRD PAINTING, OR  
FINISHING.

IT is to be supposed the complexion now wants very little more than a few light touches; therefore there will be no occasion for oiling.

BEGIN with correcting all the glazing; first, where the glazing serves as a ground or under part, we should determine what should be done next, that we may be able to make the alteration on the part with one stroke of the pencil. By this method, we preserve both the glazing and the tints; but if it happens that we cannot lay such variety of tints and finishing colours as we intended, it is much better to leave



## 102 PRACTICAL RULES FOR

off while the work is safe and in good order ; because those few touches, which would endanger the beauty of the colouring, may easily be done, if we have patience to stay till the colours are dry ; and then, without oiling, add those finishings, with free light strokes of the pencil.

I BELIEVE that Rembrandt touched upon his best pictures a great many times, letting them dry between : it was this method, most certainly, which gave them that surprising force and spirit, which is so inimitable. I find it much easier to soften the over-strong tints when they are dry, than when they are wet ; because we may add the very colours that are wanting, without endangering the dry work. If any of the colours of the palette want to be a little changed to the  
life,

## PAINING IN OIL COLOURS. 103

life, when we are painting, it is much better to do it with the knife on the palette, than with the pencil; because the knife will mix, and leave it in good order for the pencil.

## OF BACK-GROUNDS.

VAN DYCK made out the keeping in his back-grounds more from the different opposition and harmony of the colours, than from his knowledge of the *claro obscuro*. There is not in his pictures that intelligence of light and shade, which is so striking and beautiful in Rembrandt's. Van Dyck's general method was to be very still and mellow, and to break the colours of the ground with those of the drapery. This will certainly produce harmony, the principles of which method belong only to the art of colouring: but it is the knowledge of light and shade which gives that surprising force and strength, which, at first sight, we find in Rembrandt's works. There is a picture of  
a lady,

a lady, where he has made the ground just light enough to shew her complexion and hair, which is a dark brown, in the greatest perfection: the ground is a wall, which, near to the face, is lighter than the shadows of the flesh, and the light diminishes so artfully in the gradations, that though the part round the head is much darker, yet it appears to be of the same colour with that near the flesh. This method of relieving the head from the ground is better than Van Dyck's method, where he has made the ground almost of the same colour with the hair; and though his way of breaking the colours of the ground with those of the draperies is admirable, yet there appears too near a sameness, as in some of his pictures; where he has carried this principle so near that it is almost imperceptible. In Rembrandt's pictures at Yarmouth, the  
lights

## 106 PRACTICAL RULES FOR

lights and shades are as visible as those in his prints, and are remarkably broad, clear, and still; the shadows are very warm and thin, and look as if they were painted all at once, with a plenty of colour, which appears transparent: which transparency was done by glazing the dead colouring.

THE principal colours that are necessary for painting of back-grounds in portraiture, as walls, buildings, or the like, are white, black, Indian red, light and brown ochre, Prussian-blue, and burnt umbre, from which the eight principal tints are made, as follows:

1. *Pearl* is made of black, white, and a little Indian red.

2. *Lead*, of black and white, mixt to a dark lead-colour.

3. *Yellow*,



## PAINTING IN OIL COLOURS. 107

3. *Yellow*, of brown ochre and white.
4. *Olive*, of light ochre, Prussian-blue, and white.
5. *Flesh*, of Indian red and white, mixt to a middle tint.
6. *Murrey*, of Indian red, white, and a little black, mixt to a kind of purple, of a middle tint.
7. *Stone*, of white, umbre, black, and Indian red.
8. *Dark-shade*, of black and Indian red only.

HERE the lead tint serves for the blues; the flesh tint mixes agreeably with the lead; and the Murrey is a very good blending colour, and of great use where the olive is too strong. The umbre, white, and dark-shade, will produce a fine variety of stone colours: the dark-shade and umbre, used plentifully with drying oil,

## 108 PRACTICAL RULES FOR

oil, make a charming warm shadow-colour. All the colours should be laid with drying oil only, because they mix and set the better with the softener.

WHERE the marks of the trowel are so strong in the priming of the cloth, that one body of colours will not be sufficient to conceal it, we should lay a colour to prevent it; which should be dry, before we begin with those parts that we expect to finish at one painting.

THE method of painting back-grounds is divided into two parts.

THE first part is the work of the first lay: the second is to follow on that, with the finishing tints.

OF

## PAINTING IN OIL COLOURS. 109

### OF THE FIRST LAY.

WE should always begin from the shadowed side of the head, and paint the lights first; from them go into the gradations and shadows, which should be done with a large stiffish tool, very sparingly, with the dark-shade and white, a little changed with the colours that will give it more of the required hue, but very near in regard to tone and strength; leaving them like mezzotinto.

THE dark and warm shadows should be laid before the colours that join them: this we should do with the dark-shade and umbre, drove with drying oil, before the colours that join them, because, if those colours were laid on first, they would interrupt and spoil the transparency,

## 110 PRACTICAL RULES FOR

rency, which is their greatest beauty. The more the first lay is drove, the easier and better we may change it with the finishing tints ; therefore we may lay them with the greater body.

THE second part is to follow directly, whilst the first lay is wet, with those tints that we think are most proper to harmonise and finish with.

BEGIN with the lights first ; and remember, as we heighten and finish them, we do it with warmer colours ; and let those be accompanied with fine tender cold tints. The lightest part of the ground is always nearest to the shadowed side of the head : this is the part which governs all the rest ; and should be painted with a variety of light, warm, clear colours, which vanish, and lose their strength imperceptibly

## PAINTING IN OIL COLOURS. 111

perceptibly in the gradations. These should be laid with a kind of cloudy touch, rather than spotted; and we must take care that we do not cover too much of the first lay, but consider it as the principal colour.

FROM the lights we go to the gradations and shadows; for when the lights are well adapted to produce and support the head, it is easy to fall from them into whatever kind of shadows we shall find most proper for our work: then soften and blend the whole with a long large tool; which, with the strength and body of the drying oil, will melt and sweeten all together, in such a flattering manner, as will seem surprisngly finished. Remember the tints will sink, and lose a little of their strength and beauty in drying. All the grounds, as walls, &c. should



## 112 PRACTICAL RULES FOR

should be finished at one painting; but if they want to be changed, we may glaze them with a little of the dark-shade and drying oil, drove very bare; on which, with a few light touches of the colour that is wanting, we may improve their hue. The dark shadows may also be strengthened and improved by glazing, which should be done after the figures are near finished, for fear of making them too strong.

REMBRANDT'S grounds are rather brighter in the lights, and have more variety of tints than any other painter's: and to be sure he had observed, and justly too, that those tints diminish in proportion with the lights: therefore his shadows have but a faint appearance of tints. He understood the gradations in perfection, by mixing and breaking the first lay of colours,

## PAINTING IN OIL COLOURS. 113

colours, so artfully, that they flatter us in regard to their real strength.

FRESNOY says, "*Let the field or ground of the picture be pleasant, free, transient, light, and well united with colours which are of a friendly nature to each other, and of such a mixture as that there may be something in it of every colour that composes your work—as it were the contents of your palette.*"

DE PILES says, "*Variety of tints, very near of the same tone, employed in the same figure, and often upon the same part, with moderation, contribute much to harmony.*"

ALL the curtains should be dead-coloured when we paint the ground; and should be done with clean colours, of a

## 114 PRACTICAL RULES FOR

near hue to the intended curtain; such as will support the finishing colours. Do it with a tender sort of keeping, and near in regard to their tone in the lights, but much softer in the shadows. All which should be mixed and broken with the colours of the ground; and, as *Fresnoy* says, “*Bodies that are back in the ground, should be painted with colours allied to those of the ground itself.*” It will often happen, for want of the life, or some design, that we cannot make the folds in the first painting; we should then leave the masses of light and shadow, in regard to the keeping of the picture, broad and well united together, such as may seem easy to finish on. The colours of the landscape, in back-grounds, should be broke and softened also with those of the parts which join them. This method brings them into *keeping*, which will  
make

## PAINTING IN OIL COLOURS. 115

make all the parts of the ground as it were of one piece, so that the different parts do not stare, nor cut at their extremities.

THE sky should be broke with the lead and the flesh tints: the murrey tint is of great use in the grounds of distant objects; and the umbre and dark-shade in the near grounds: the greens should be more beautiful than we intend them, because they will fade and grow darker. After all is painted, we should go over the whole very lightly with the softener, as we did the grounds, which will make it look agreeably finished.

## ON COPYING.

THE artists in all ages have copied and studied each other, in whatever they found most for their purpose, and for the advancement of their art; was it not for this, the art itself would soon dwindle and decay.

RUBENS studied principally the works of Titian, Paul Veronese, and Tintoret; that is, he copied such of their pictures as he thought most worthy his imitation, and kept them for his own use.

VAN DYCK copied Titian, and all the Venetian school; or, in De Piles's phrase, "*skimmed their cream.*" Teniers is celebrated for transforming himself into as  
many



PAINTING IN OIL COLOURS. 117

many masters as he copied; which he did so exactly, that it is hard to distinguish the copies from the originals. Hanne-man's copies of Van Dyck are taken for the originals of that great master. I have seen copies by Stone, sold at great prices for undoubted originals, notwithstanding they were divested of that free penciling, and charming variety of tints, which are so apparent in Van Dyck. Buckshorn was one of the last good copiers we have had in England; the rest that followed him and his master Lely, soon dwindled to half-artists. There is a copy of Buckshorn's painting after Van Dyck, which is much better than any of Stone's, viz. the picture of the Earl of Strafford and his Secretary in the Marquis of Rockingham's \*

\* Probably at this time in the possession of Earl Fitzwilliam.

## 118 PRACTICAL RULES FOR

collection, which is well painted, and deservedly esteemed.

EVERY one that has heard of Andrea del Sarto's copy of Leo the tenth, painted by Raphael and Julio Romano, will be convinced of the great use and merit of copying.

It is surprising that since the age of these great masters, we have scarcely had a man able to make a *fine* copy from any one of their pictures; and if such a genius should hereafter arise, it is to be feared the destroyers of the art, if they are suffered to go on, will *scour off* the remains of their beauties, so that very little will be left for him to study; and by the end of this century, there will be none fit for copying.

## PAINTING IN OIL COLOURS. 119

IT is in vain for a man to think of making a fine imitation of any of the great masters, without being thoroughly acquainted with the nature of colours and of colouring; and without being clearly convinced, at sight of the picture he is going to copy, of the method and principles on which it was painted. It is the want of this knowledge and conviction which leads us into so many errors and mistakes.

A PAINTER, that has acquired any sort of manner\*, will always tincture his copying with the same. Now-a-days we are too apt to fall into a manner, before we understand the nature of colours; which is the case, where some predominant colour or hue appears in all the com-

\* What is generally termed *style*.

## 120 PRACTICAL RULES FOR

plexions alike. For this reason a painter, whose carnations are too red, will certainly make his copies blush: or if his colouring and shadows be heavy, they will of course fall into the obscure. By the same rule, whatever tints infect his colouring, the same will unavoidably taint his copying; for which there is no cure, because he himself is infected.

MONS. DE PILES says, “ *It is very rare to change a bad manner in colouring for a better: that Raphael, Michael Angelo, Leonardo da Vinci, Julio Romano, and other great masters, spent their whole lives without truly understanding good colouring.*”

And though colouring is the principal excellence in copying, yet it is necessary that every artist should avoid a particular manner with his pencil, otherwise it will certainly be seen in his work.

FROM

## PAINTING IN OIL COLOURS. 121

FROM what has been said on this subject, I apprehend, it appears, that the art of copying, which was practised by the great masters, in order to catch each other's excellencies and perfections, and by which their noble works have been so often repeated, and as it were renewed, is so far from deserving contempt, that it ought to be encouraged, as a thing highly useful, and worthy of esteem.

OF



## 122 PRACTICAL RULES FOR

### OF PAINTING DRAPERIES.

IN order to understand the nature, and different degrees, of colours or tints used in painting draperies, I first determine how many divisions are absolutely necessary to make the first lay of colours, and, after that, the reflects and finishing tints.

THE right method of painting draperies or satins in general, is to make out the whole, or the first lay, with three colours only; viz. the lights, middle tint, and shade tint,

FOR the lights, that is, the colour of all the high lights:—The middle tint should be very near to the general hue  
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## PAINTING IN OIL COLOURS. 123

of the satin, &c. and of an exact middle degree between the high lights and the shade-tint. The shade-tint should be dark enough for the general hue of all the shadows, for which reason it is called the shade-tint.

WE should observe, that the lights should rather incline to a warmish hue; and the middle tint should be made of friendly working colours, such as will always mix of a clean, tender, coldish hue. The shade-tint should be made of the same colours as the middle tint, only with less light; therefore this tint will also mix of a tender clean colour. It is with these three colours we should make out the whole, like mezzotinto; and we should understand, that all the beauty and character of the folds, the shape, attitude, and principal lights and shades, are  
all

## 124 PRACTICAL RULES FOR

all to be considered and made with these three colours only; which should be done to our satisfaction before we add any of the reflects or finishing tints.

THE reflects of drapery and satins are generally productions of their own, and are always lighter than the shadows on which they are found; and being produced by light, will consequently have a light, warm colour, mixed with the local colour that receives them. Here it will be necessary to observe the general method and secret in managing the colours of the first lay, and those of the reflects and finishing tints.

IN the first lay, the high lights should be laid with plenty of stiff colour, and then shaped and softened into character with the middle tint, very correctly.

Where

## PAINTING IN OIL COLOURS. 125

Where the gradations of the lights are slow, as in the large parts, it will be proper to lay the middle tint *first* at their extremities, with a tool that will drive the colour, and leave it sparingly; because the lights will mix and lie the better upon it: *next*, make out all the parts of the shadows with the shade-tint drove bare: after this comes the middle tint, which fills up, and serves as the second lights and gradations, and should be managed together very nicely, to character, without touching any of the high lights which finish the first lay.

THE reflects and finishing tints are in general the antipathies of the first lay: they will, without great care, poison and dirty the colours on which they are laid; and therefore should be laid with a delicate light touch, without softening. If it  
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## 126 PRACTICAL RULES FOR

is over-done, we must remember to recover it with the colour of the part on which it was laid: this may be done directly, or when it is dry. We should also observe, whether the reflects proceed from the same colour or any other, that the method of using them is the same.

BEFORE I proceed to the particular colours, it will be proper to make some observations on their grounds.

It often happens, that the colour of the cloth is very improper for the ground of the drapery; and when it is so, we should change it with those colours which we think are most proper to improve and support the finishing colours. This method of dead-colouring must consequently preserve them in their greatest lustre. In dead-colouring, we should lay the  
lights



## PAINTING IN OIL COLOURS. 127

lights and shades in a manner, so as only to shew a faint idea of them, with regard to the shape and roundings of the figure. If we have a *design* to work from, then it will be proper to make all the large and principal parts in their places; which should always be done with a colour that is clean, and lighter than the intended drapery, though in general of the same hue: and let the shadows be no darker than a middle tint: these should be mixed and broke in a tender manner, and then softened with a large tool, so that nothing rough or uneven be left to interrupt or hurt the character of the finishing colours.

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### WHITE SATIN.

ALL whites should be painted on white grounds, laid with a good body of colour,

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colour, by reason this colour sinks more into the ground than any other.

THERE are four degrees of colours in the first lay to white satin: the first is the fine white for the lights; the second is the first tint, which is made of fine white and a very little ivory black, mixed to an exact middle degree between the white and middle tint. This colour follows the white; and it is with this we should shape the lights into character, before we lay on any other: and take care that this first tint appear distinctly between the white and the middle tint, otherwise the beauty and character of the satin will be spoiled.

THE middle tint should be made of white, black, and a little Indian red: these three colours are very friendly, and mix

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to

## PAINTING IN OIL COLOURS. 129

to a beautiful clear colour of a pearly hue, which has the true brightness and warmth of the general hue of the satin. Remember to allow for the red hue changing a little to lead. If there is occasion to make any part in the middle tint lighter, we should do it with the first tint only. This colour should also be laid sparingly before the white, in all the little lights that happen in the middle tints and shadows; on which we should lay the white with one light touch; and be sure not to cover all the part that was made with the first tint: if we do, it will spoil the character, and look like a spot, for want of the softening edge or border, which must be between the white and the middle tint. The shade-tint should be made of the same colour as the middle tint; but with less white, so that it be dark enough for the shadows in general;

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with

## 130 PRACTICAL RULES FOR

with which we should make out all the parts of the shadows nicely to character : this is the work of the first lay.

NEXT come the reflects and finishing tints.

BROWN ochre, mixed with the colour of the lights, is the most useful colour in general for all reflects in draperies that are produced from their own colours. All accidental reflexes are made with the colour of the parts from which they are produced, and the local colours that receive them. There are but two reflecting tints wanted for draperies in general ; *i. e.* to any one particular colour : one should be lighter than the middle tint, the other darker. These colours may be a little changed on the palette with the first and middle tints, as occasion requires, or lightly broken

## PAINTING IN OIL COLOURS. 131

broken on the part that receives them: but this last method is not so safe as the other. The tint sufficient for blending the dark shadows to the mellow tender hue, is made with the shade-tint and a little brown ochre; which should be laid on very sparingly, with soft light touches, for fear of making them dull and heavy. If it should be over-done, we may recover it with the colour it was laid upon.

WE often see a little blue used in the first tint of white satin. Van Haecken, who was the best drapery-painter we ever had in England, did so; and sometimes, instead of the blue, he used blue-black, till he found it to be a pernicious colour, and was therefore obliged to use blue; because his middle tint, which was made only of black and white, was so very cold, that no other colour but blue would make a



## 132 PRACTICAL RULES FOR

colder tint: yet he managed these cold colours, in all the lights and middle tints, so agreeably, and so light and easy was his touch, that we cannot help admiring, and may learn something from him. Though, he was not so lucky in his shadows, which were generally of a heavy dirty hue: this was owing to the colours he used, and the method of using them; which will always have such an effect, when a warm or dirty colour is mixed with a clean light one; for, being mixed together, they will form a dirty colour, that must consequently appear so in the work. But if his lead or shade-tint had been mixed with Indian red instead of the ochre, and then followed with a few light blending touches of the ochre-tint, it would have left them clean and mellow. It is the want of the red hue which makes the white satins appear so often like pewter.

BLUE

BLUE SATIN.

BLUE satin is made of Prussian-blue and fine white.

THE best ground for blue is, white for the lights, and black and white for the shadows.

THE first lay of colours for blue is divided into three degrees or tints.

WE should first make the middle tint of a beautiful azure; then mix the colour for the lights about a middle degree between that and white. Make the shade-tint dark enough for the shadows in general. All the broad lights should be laid with a plenty of colour, and shaped to character with the middle tint, before we lay on

### 134 PRACTICAL RULES FOR

any other colours. Remember, the less the colours are mixed, the better they will appear, and stand ; for the lights of blue should be managed with as much care as those of white satin. Next is, to follow with the rest of the middle tint, and then make out all the shadows. The more we drive the shade-tint, the better it will receive the reflects and finishing tints. The shadows should be strengthened and blended with ivory-black and some of their own colour, which will mix with them into a tender, mellow hue,

THE reflects are made as those of white satin ; that is, with ochre and some of the lights ; which should be perfectly done, as we intend it, at one painting. The shadows, when dry, may be a little improved, if there is occasion to alter them,  
with

with the colours they were made with. The Prussian-blue proper to be used, is that which looks of the most beautiful azure before it is ground ; and the sooner it is used after it is ground, the better it will work and appear.

VELVET may be painted at once. The method is, to make out the first lay with the middle tint and shade tint ; on which we should lay the high lights with light touches, and finish the shadows as we did those of the satin ; but the nearest imitation of velvet we can make, is done by glazing ; which is prepared on a ground or dead-colouring of such colours as will, when dry, bear out and support the glazing colour in its highest perfection. The nature of the glazing colour is to be of a fine transparent quality, and used simply with oil only ; so that whatever ground

## 136 PRACTICAL RULES FOR

it is laid on, the whole may appear distinctly through it. The best ground for blue is made with white and ivory-black; the white is for the high lights, which, with the middle tint and shade-tint, makes out the first lay, like mezzotinto. Remember to make the middle tint lighter in proportion to the glazing, because that will make it the darker. It is often necessary to cover all but the high lights with a thin glazing; not with plenty of oil in the colour, but laid with less quantity than if it was to be done once only. If any of it touch the lights, we should wipe it off with a clean rag. The very high lights should be improved, and made of a fine white, and left to dry. The glazing colour is Prussian-blue, ground very fine with nut oil; and should be laid with a large, stiffish tool, that will drive the colour, as occasion requires. It is  
on



## PAINTING IN OIL COLOURS. 137

on the last glazing we should strengthen and finish the shadows.

THE greatest fault in the colouring of draperies is, the painting the shadows with strong glaring colours, which destroy the beauty of the lights. This is not only the reverse of art, but of nature, whose beauty always diminishes in proportion with the lights ; for this reason we should take care to blend and soften the shadows with such friendly colours as will agree with their local character and obscurity. Here we may observe, that glazing the middle tint, which is made of black and white, will not produce a colour so blue, as if it had been prepared with Prussian-blue and white ; yet this colour will preserve the beauty of the lights in the highest perfection, by reason of its tender obscure hue, when the blueness of the  
other

### 138 PRACTICAL RULES FOR

other would only diminish them. This method of glazing the blue is the general rule for all glazing.

WHEN we are glazing blue, the lights may be glazed with ultramarine, though all the other parts are done with Prussian blue. This method saves a great quantity of that valuable colour, and answers our purpose as well as if it had all been done with ultramarine.

THOUGH this general method of painting fatins, is to make the first lay of colours with three degrees of tints; yet we should understand, in using them, that they produce two more: for the mixing of two different colours together on the cloth, will make another of a middle tint between them: so it is with the lights and middle tint; and with the middle and shade.

## PAINTING IN OIL COLOURS. 139

shade-tint; the first answers to the first tint in white fatin; and the last will consequently be a sort of gradating, or half-shade.

IF the lights and middle tint mix to a beautiful, clean colour, of a middle hue between both, there will be no occasion for a colour to go between them, as in the blue fatin; but if in mixing, they produce a tint inclining to a dirty warm hue, then there must be another found of a sympathizing nature, which should be laid between them, in order to preserve the beauty of the lights, as the first tint in the white fatin; for if it was not so, the red, in the middle tint, would certainly dirty and spoil the white.

It is highly necessary to understand these principles of the first lay of colours,  
in

## 140 PRACTICAL RULES FOR

in order to have a perfect knowledge of the general rule of colouring, on which the principles of colouring depend.

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### SCARLET AND CRIMSON

A LIGHT yellow-red, made of light ochre, light-red, and white, is the proper ground for scarlet; the shadows are Indian red, and, in the darkest parts, mixed with a very little black.

THE second painting should be a little lighter than we intend the finishing colour; in proportion to the glazing, which will make it darker.

THE high lights, are vermilion and white for satin, velvet, and cloth; the middle is vermilion and white, with a  
very

## PAINTING IN OIL COLOURS. 141

very little lake or Indian red ; the shade-tint is made with Indian red and lake, with the addition of a little black in the darkest shadows. The difference between scarlet and crimson is, that the high lights of crimson are whiter, and the middle tint is made darker. Their reflects are made with light-red and vermillion. The high lights should be laid and managed in the same manner as those of the blue, for fear of dirtying them ; and sometimes they require to be touched over the second time, before we glaze them. The more the colours of the second painting are drove, the easier and better they may be managed to character ; but the high lights should have a good body of colour, and be left with a delicate light touch. After it is well dry, we should finish with glazing the whole with fine lake, and improve the reflects and shadows. Remem-



## 142 PRACTICAL RULES FOR

ber that the scarlet requires but a very thin glazing; and it is better to glaze the crimson twice over, than lay too much at one painting.

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### PINK-COLOUR.

THERE are two different methods of painting a pink colour: one is by glazing; the other is done with a body of colours at one painting. The same grounds do for both; which should be a whitish colour, inclining to a yellow, for the lights; and Indian red, lake, and white, for the shadows.

THE second painting for the glazing method is done with the same colours, and a little vermilion for the reflects;  
and

## PAINTING IN OIL COLOURS. 143

and vermilion and white for the high lights: when it is dry we should glaze it with fine lake, and then break and soften the shadows into character and harmony directly.

THE other method is, to make the high lights with carmine and white; the middle tint with lake, white, and a little carmine; and the shadows with lake and Indian red, with a little vermilion for the reflects. But remember the shadows will require to be broken with some tender obscure tint.

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### YELLOW.

THE Ground for yellow should be a yellowish white for the lights, and a mixture of the ochres for the shadows.

THERE

## 144 PRACTICAL RULES FOR

THERE are the same number of tints in the yellow as there are in the white fatin; the method of using them is the very same. The lights are made with king's yellow, ground with clean good drying oil. The first tint is light ochre, changed with a little of the pearl tint made with the dark shade and white; which should be laid and managed as the first tint in white fatin. The middle tint is a mixture of the light and brown ochre, softened with the pearl tint. The shade-tint is made with brown pink and brown ochre. These belong to the first lay.

THE reflects are light ochre; and sometimes, in the warmest parts, mixed with a little light-red: the shadows are strengthened with brown pink and burnt umbre.

THESE colours, well managed, will  
pro-

## PAINTING IN OIL COLOURS. 145

produce a yellow very like Van Dyck's; but if we leave out the king's yellow, which is in the high lights only, then it will be one of Lely's favourite yellows.

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### GREEN.

THE proper ground for green is a light-yellow green; which is made of light ochre, a little white, and Prussian-blue, for the lights; and the ochre, brown pink, and Prussian-blue, for the shadows.

THE finest green we have, for drapery, is made of king's yellow, Prussian-blue, and brown pink. The high lights are king's yellow and a very little Prussian-blue; the middle tint has more Prussian-blue; and the shade-tint is made with some of the middle tint, brown pink, and

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more

## 146 PRACTICAL RULES FOR

more Prussian-blue: but the darkest shadows are brown pink and a little Prussian-blue. The lights and middle tint should be managed in the same manner as those of the blues. The shade tint should be kept entirely from the lights, because the brown pink that is in it, will, in mixing, dirty them, as the black does those of the blues. Remember to allow for their drying a little darker; and that the king's yellow should be ground with good drying oil; for the longer it is drying, the more it will change and grow darker; and the sooner it is used, the better it will stand. It is proper to have two sorts of king's yellow; one to be very light, which will do best for the high lights of velvet.

CHANGEABLE.



CHANGEABLE.

CHANGEABLE colours are made with four principal tints, viz. the high lights, middle tint, shade tint, and reflecting tint.

THE greatest art lies in finding the exact colour of the middle tint; because it has more of the general hue of the silk than any of the others. The shade-tint is of the same hue with the middle tint, though it is dark enough for the shadows. The high lights, though often very different from the middle tint, should be of a clean, friendly-working colour, that will, in mixing with it, produce a tint of a clean sympathizing hue.

THE method of painting silks is to make out the folds with the shade tint,

## 148 PRACTICAL RULES FOR

and then fill them up in the lights with the middle tint. This is the first lay, which should be done to our satisfaction before we add any other colours; and the stiffer the middle tint is used, the better the high lights may be laid upon it. The reflecting tint falls generally upon the gradating half-shades, and should be laid with tender touches, sparingly, for fear of spoiling the first lay.

THIS method of painting answers to all coloured silks, as well as changeable, with this difference only, that the plain colours require not so much art in matching the tints, as the changeable do. The last part of the work is the finishing, and strengthening the shadows with an obscure tint, a little inclining to a mellowish hue; such as will not catch the eye, and interrupt the beauty of the lights.

BLACK.

BLACK.

THE best ground for black is light-red for the lights; and Indian red and a little black for the shadows.

THE finishing colours are, for the lights, black, white, and a little lake. The middle tint has less white, and more lake and black. The shade-tint is made of an equal quantity of lake and brown pink, with a very little black.

THE method of painting black is very different from that of other colours; for as the principal thing in them, is to leave their lights clean and brilliant, so in black, it is to keep the shadows clear and transparent. Therefore we should begin with the shade-tint, and glaze over all the sha-

## 150 PRACTICAL RULES FOR

dows with it. Next, lay in the darkest shadows with black, and a little of the shade-tint, very correctly. After that fill up the whole breadth of lights with the middle tint only. All which should be done exactly to the character of the fatin, &c. and then finish with the high lights.

HERE we may observe, the ground, being red, will bear out and support the reds, which are used in the finishing colours : the lake in the lights takes off the cold hue, and gives it a more beautiful colour. If the shade-tint was of any other colour than a transparent warm hue, the shadows would consequently be black and heavy ; because no other colours can preserve the warm brilliancy, which is wanting in the shadows of the black, like lake and brown pink. Black is of a cold heavy nature, and always too strong for any other

## PAINTING IN OIL COLOURS. 151

other colour ; therefore we should make an allowance in using it. There will be a few reflects in satin, which should be added as those of other colours ; but they should be made of strong colours, such as burnt umbre, or brown ochre, mixed with a little of the shade-tint.

THOUGH the grounds which are here mentioned for the draperies, are absolutely necessary for the principal and nearest figures in a picture, such as a single portrait, or the like ; yet they are not intended for figures, which are placed more into the picture. Such as are behind the principal or front figures, their grounds should always be fainter, in proportion to their local finishing colours.



## LINEN.

THE colours used in linen are the same as those in white satin, except the first tint; which is made of white and ultramarine ashes, instead of the black, and mixed to a very light blueish tint.

IN the dead-colouring we should take particular care, that the grounds be laid very white and broad in the lights: the shadows are made with black, white, and a little Indian red, like the middle tint of white satin. These should be left very light and clean, in order to support the finishing colours.

THE second painting begins with glazing all the lights, with a stiff pencil and fine white only, drove bare, without using  
any

## PAINTING IN OIL COLOURS. 153

any oil: the shadows may be scumbled with poppy oil, and some of the colour they were made of. This is the first lay, on which we are to follow with the finishing colours directly. The middle tint of white satin is the best colour for the general hue of the shadows. With this and white, in different degrees, we should make out all the parts to character, with free light touches, without softening. Then with a large long-pointed pencil, and fine white, lay the high lights very nicely, with one stroke. After this comes the fine light blueish tint, which should be mixed light, and laid in the tender gradations very sparingly and lightly, without filling them up.

REMEMBER the first lay should be left clear and distinct; the more it appears, the better. It is the overmixing, and  
joining

## 154 PRACTICAL RULES FOR

joining all the colours together, which spoils the beauty of the character ; therefore it is better to let it dry before we add the reflects and finishing tints.

THE method of letting the beautiful clear colours dry, before we add the warm, reflex, and harmonizing tints, prevents them from mixing, and dirtying each other.

THE principal blending colours used in the reflects, are the yellow tint, green tint, and the rose tint ; which last is made of lake, Indian red, and white. I find glazing the pearl and lead colours with white, though it seems to answer our purpose when it is done, will certainly sink, and be lost in the grounds on which it is laid ; therefore we should make the dead-colouring as white as we intend  
the

## PAINTING IN OIL COLOURS. 155

the finishing colours, by reason they will sink a little, in proportion to the colour of the cloth, which the glazing with pure white only will recover.

## LANDSCAPES.

LANDSCAPES.

THE principal *Colours* used in Landscapes, are,

1. Fine White.
2. Common White.
3. Fine Light Ochre.
4. Brown Ochre.
5. Brown Pink.
6. Burnt Umbre.
7. Ivory Black.
8. Prussian-Blue.
9. Ultramarine.
10. Terra-Verte.
11. Lake.
12. Indian Red.
13. Vermilion.
14. King's Yellow!



THE principal *Tints* used in Landscapes, are,

1. Light Ochre and White.
2. Light Ochre, Prussian-Blue, and White.
3. Light Ochre and Prussian-Blue.
4. The same, darker.
5. Terra-Verte and Prussian-Blue.
6. Brown Pink and Prussian-Blue.
7. Brown Pink and Brown Ochre.
8. Brown Pink, Ochre, and Prussian-Blue.
9. Indian Red and White.
10. Ivory Black, Indian Red, and Lake.

THE colours necessary for dead-colouring, are common white, light ochre, brown ochre, burnt umbre, Indian red, ivory black, and Prussian-blue.

THE

## 158 PRACTICAL RULES FOR

THE principal colours and tints for painting the sky, are fine white, ultramarine, Prussian-blue, light ochre, vermilion, lake, and Indian red.

THE tints are a fine azure, lighter azure, light ochre and white, vermilion and white, and a tint made of white, a little vermilion, and some of the light azure.

LANDSCAPES should be painted on a sort of *tanned-leather colour*, which is made of brown ochre, white, and light-red. This colour gives a warmth to the shadow colours, and is very agreeable and proper for glazing.

SKETCHING, or rubbing in the design, is the first work of the picture.

THIS

## PAINTING IN OIL COLOURS. 159

THIS should be done with burnt umbre, drove with drying oil, and a little oil of turpentine, in a faint, light, scumbling, free manner, as we shade with Indian ink and water; leaving the colour of the cloth for the lights, as we do that of the paper. Remember, in doing it, we leave no part of the shadows so dark as we intend the first lay, or dead-colouring, which is to be lighter than the finishing colours. And though the foliage of the trees is only rubbed in, with a faint sort of scumbling, yet the trunks and bodies should be in their proper shapes, with their breadths of light and shadow. All kinds of buildings should be done in the same manner, leaving the colour of the cloth for their lights. The figures on the fore-ground, if they are determined, should also be sketched in the same method, and then left to dry.

OF

## 160 PRACTICAL RULES FOR

### OF DEAD-COLOURING.

LET the first lay or dead-colouring be without any bright, glaring, or strong, dark colours; so that the effect is made more to receive and preserve the finishing colours, than to shew them in the first painting.

THE sky should be done first; then all the distances; and so work downwards to the middle group, and from that to the fore-ground, and nearest parts. Remember that all the parts of each group, as trees, buildings, or the like, be all painted with the group they belong to.

THE greatest secret in dead-colouring is, to find the two colours which serve for the ground of the shadows in general, the sky excepted, and the method of using

them with the lights: the first of which is the dark-shade with a little lake in it; the other colour is only burnt umbre. These should be a little changed to the natural hue of the objects, and then laid and drove with drying oil, in the same manner as we shade with Indian ink, which is a scumbling kind of glazing; and as such they should be left; for, otherwise, they would be dark and heavy, and therefore would be entirely spoiled for the finishing glazing. Both these colours mix and sympathize agreeably with all the lights, but should be laid *before* them.

WHEN the landscape is designed, begin with the sky, which should be laid with a good body of colours, and left with a faint resemblance of the principal clouds; and this we should do more in the manner

M

of



of claro obscuro, than with finishing colours: the whiter it is left, the better it will bear out and support them. The distances should be made out faint and obscurely with the dark-shade, and some of their lights in different degrees; and laid so, as best to find and shew their principal parts. As we come more into the middle group, we fall by degrees into the burnt umbre in the shades. All the grounds of the trees should be laid or rubbed in, enough only to leave an idea of their shapes and shadows faintly. The ground of their shadows must be clean, and lighter than their finishing colours, such as will support their character, and seem easy to finish on.

IN painting the lights, it is better to incline more to the middle tint, than to the very high lights; and observe to leave  
SECOND M. them

## PAINTING IN OIL COLOURS. 163

them with a sufficient body of clean colours, which will receive and preserve the finishing colours the better; all which may be done with a few tints. After this, go over the whole with the sweetener very lightly, which will soften and mix the colours agreeably for finishing.

## SECOND PAINTING.

**BEGIN** with the sky, and lay in all the azure and colours of the horizon ; then soften them. After that lay in the general tint of the clouds, and finish on it with the high lights, and the other tints that are wanting, with light, tender touches ; then soften the whole with the sweetener very lightly. Remember the finishing of the sky should be done all at one painting, because the tender character of the clouds will not do so well as when the whole is wet. Observe, that the stiffer the azure and colours of the horizon are laid, the better the clouds may be painted upon them.

THE greatest distances are chiefly made  
with

## PAINTING IN OIL COLOURS. 165

with the colour of the sky; and as they grow nearer and darker, we should glaze and scumble the parts very thin, with such glazing shadow-colours as come nearest to the general hue of the group the objects are in. This glazing should be of a darkish hue, and the first painting or dead-colour should be seen through it distinctly. On this lay, or ground, we should add the finishing colours.

Now, supposing this glazed ground is properly adapted to the object and place, it will be easy to find the other colours which are wanted for the lights and finishings of the same. But in laying them we must take great care that we do not spoil the glazing; therefore we should be very exact in preparing those colours on the palette, and then be sure to lay them with light free touches.



## 166 PRACTICAL RULES FOR

BEFORE proceeding any farther, it will be proper to say something of the most useful glazing colours.

LAKE, Terra-Verte, Prussian-Blue and Brown Pink, are the four principal. The more we manage them like Indian ink, and the more distinct we leave them, the better their transparent beauty will stand and appear, provided we do it with good drying oil. After these four glazing colours, burnt umbre is a very good glazing, warm brown, and of great use in the broken grounds and nearest parts; but the most agreeable colour for the darkest shadows, is the dark-shade improved with lake. It is a fine warm shade, when it is drove with drying oil; no colour in the world is so sweet and sympathizing; it mixes harmoniously with all the lights, as well as the shadows, and is a charming colour



colour in the trunks and bodies of trees, and in all kinds of buildings.

WE should make out all the ground of the objects with such glazing shadow-colours, as seem nearest to the natural hue of the object, in that situation. But as the principal glazing colours themselves are often too strong and glaring, they should therefore be a little changed, and softened with such colours as are of a near resemblance to themselves and the objects. Thus, if it is in the distances, the terra-verte and azure, which are their principal glazing colours, may be improved and made lighter with some of the sky tints; and as the distances come nearer, with the purple. As we get more into the middle group, the terra-verte and Prussian-blue may be changed with some of the green tints, such as are made without

## 168 PRACTICAL RULES FOR

white; for white is the destruction of all glazing colours. As we approach the first group, there is less occasion for changing them; but the fore-ground, and its objects, require all the strength and force of glazing which the colours are capable of producing.

AFTER this glazing ground, we should follow with strengthening the same in the shadows and darkest places, in such manner as will seem easy to finish; which is the first lay of the second painting.

The colours that come next for finishing, are in the degree of middle tints. These should be carefully laid over the greatest breadth of lights, in such manner as not to spoil and cover too much of the glazing. Do it with a good body of the colour, as stiff as the pencil can agreeably manage

## PAINTING IN OIL COLOURS. 169

manage to character. Remember, the colours of the middle tint should be of a clean, beautiful hue. According to these methods, I think it will be easy to finish all the second painting as we work down, from the sky, through the middle group. As we come to the first group, where all the objects should appear perfectly finished, we should finish their under or most distant parts, before we paint any of the other which appear nearer. Observe this method down to the last and nearest objects of the picture; and where it so happens that painting one tree over another does not please, forbear the second, until the first is dry. Thin, near trees, of different colours, will do better if we let the under parts dry before we add the finishing colours,

THE

THE THIRD AND LAST  
PAINTING.

IF oiling is necessary, lay the least quantity that can be; which should be done with a stump-tool, or pencil, proportioned to the place that is to be oiled, so that we may oil no more than is wanted: then wipe the whole place that is oiled, with a piece of silk handkerchief. By this method we leave no more oil than is proper for our purpose.

WHEN we are going to finish any objects, we should remember to use a great variety of tints, very near of the same colour; but most of all, when we are finishing trees. This gives a richness to the colouring, and produces harmony. The  
greens



## PAINTING IN OIL COLOURS. 171

greens will fade, and grow darker ; therefore it is highly necessary to improve and force them, by exaggerating the lights, and making an allowance in using them so much the lighter. For the same reason, we should take great care that we do not overcharge and spoil the beauty of the glazing ; for if we do, it will be dull and heavy, and will consequently grow darker.

THE method for painting near trees is to make the first lay very near to nature, though not quite so dark, but more in the degree of a middle tint, and follow it with strengthening the shadows, and improving the middle tints ; and last of all, lay the high lights and finishing colours. But all this cannot be done as it should be at one painting : therefore, the best way is to do no more than the first lay



172 PRACTICAL RULES FOR

with the faint shadows, and leave it to dry.

THEN begin with improving the middle tints and shadows, and let them dry.

THE third and last work is adding all the lights and finishing colours, in the best manner we are able. This method of leaving the first and second part to dry separately, not only makes the whole much easier, and more agreeable, but leaves the colours in the greatest perfection ; because most of the work may be done with scumming and glazing, and some parts without oiling. The lights also may be laid with a better body of colour, which will not be mixed and spoiled with the wet ground. What I have said of trees, answers the same to all kinds of shrubs and bushes.

## PAINTING IN OIL COLOURS. 173

THE figures in a landscape are the last work of the picture ; those in the foreground should be done first, and those in the distances next : for, after the figures in the first and farthest group are painted, it will be much easier to find the proportions of those in the middle parts of the picture. And we should observe, that the shadows of the figures should be of the same hue or colour with those of the group, or place, they are in.

# EPITOME

OF

# COLORITTO.

A VERY valuable work, now scarcely procurable at any rate, was published by the late ingenious M. le Blon. It was termed *Coloritto*, or the Harmony of Colouring; which is the art of mixing colours, in order to represent naturally in all the gradations of painting light and shade, the *flesh*, or any other object that is represented in the true and pure light.

AFTER

## EPITOME OF COLORITTO. 175

AFTER duly considering the philosophy of colours, and putting his observations to the test of experiment, he draws these conclusions—that Painting can represent all visible objects with *three colours*, viz. *Yellow*, *Red*, and *Blue*; for all other colours can be composed of *these three*, which may be called *primitive*; for example,

Yellow  
and  
Red } make an Orange Colour.

---

Red  
and  
Blue } make a Purple and Violet Colour.

---

Blue  
and  
Yellow } make a Green Colour.

And a *mixture* of the above *three original colours* makes a *Black*, as also every other colour whatsoever; as has been demonstrated

## 176 EPITOME OF COLORITTO.

strated by the invention of printing figures in their natural colours \*.

IT is here to be understood to mean *material* colours only, not *impalpable* ones; for the admixture of the latter will produce a perfect *white*, as Sir Isaac Newton has shewn. But both are the produce of all the primitive colours compounded or mixed together; the one by *impalpable*, the other by *material* colours.

TRUE PAINTING represents;

1st. Lights, by *White*.

2d. Shades, by *Black*.

3d. Reflections, by *Yellow*.

4th. Turnings off, by *Blue*.

N. B. In nature, the general reflex-co-

\* The prints here alluded to are not very common, but may be occasionally found at brokers' stalls. The modern mode of printing in colours is very different.

lour



## EPITOME OF COLORITTO. 177

lour is *yellow* ; but all the *accidental* reflections, caused by an opposite body or object, partake of the colour of the opposite body that caused them.

The author proceeds next to lay down rules for the preparation of the various palettes necessary in this mode of painting. They are represented by copper plates, printed in the genuine colours and admixtures, with the gradations of tints that are used in the different stages of the work. But these are more expensive than useful, as the theory is too simple and beautiful to need any additional aid.

taking care to store the vessel which con-  
tains the materials, in proportion to the  
heat required to melt them. ON

**VARNISH-MAKING.**  
fourth of spirit of wine; let one fourth  
space be reserved for the ebullition; and  
for removing the spirit of turpentine, with

out which the varnish would evaporate.  
**VARNISHES** are of two sorts, viz. *Spi-  
rit Varnish*, and *Oil Varnish*.

**OBSERVATIONS\* ON THE PREPARATION  
OF SPIRIT VARNISH.**

the whole ingredients are dissolved: this  
1. **SPIRIT Varnish** may be made in  
the heat of a water-bath (*balneum Mariæ*),

\* These observations are taken from the Memo-  
randums of French Artists, who are the best makers  
of varnish of any people in the world.

part taking

## ON VARNISH-MAKING 179

taking care to close the vessel which contains the materials, in proportion to the heat required to melt them.

2. PUT in no more at a time than three fourths of spirit of wine; let one fourth space be reserved for the ebullition, and for receiving the spirit of turpentine, without which the varnish would evaporate.

3. LET all the more solid articles of which the varnish is to consist, be put in, if possible, at the same time.

4. CONTINUE to heat the vessel till the whole ingredients are dissolved: this may be known by the non-resistance and limpid state of them.

5. AT this period, incorporate the remainder of the spirits of wine, viz. a fourth

## 180 ON VARNISH-MAKING.

part, with the varnish now ready to receive it.

6. PERMIT the whole to mix, by constantly stirring them together, with the water-bath at its full heat; when the varnish will assume the appearance of a uniform fluid.

7. LEST any impurity has intruded, strain the varnish, whilst hot, through a fine cloth.

8. LET the varnish be at rest some days before it is used.

9. SPIRIT varnish is totally opposite in its nature to oil varnish; for it is better for being new, being apt to grow thick and yellow by keeping, whereas the other improves in beauty by AGE.

OBSER-

## ON VARNISH-MAKING. 181

### OBSERVATIONS ON THE PREPARATION OF OIL VARNISH.

1. COPAL and amber are the principal ingredients in OIL varnish: both these substances have the valuable properties of solidity and transparency.

2. THE above substances ought never to be mixed together \*: the copal, being almost colourless, should be reserved for clear and light colours; and the amber should be employed over gold, or colours of a sombre hue.

3. THE best mode of operating is to dissolve the copal, or the amber, by itself,

\* The famous *Vernis Martin* is an exception to his rule.



## 182 ON VARNISH-MAKING.

before the oil is put in ; because the heat that is required to dissolve either, will burn and discolour the oil.

4. THE oil of which the varnish is composed should be perfectly free from greasiness, and carefully bleached.

5. WATCH attentively to the moment of fusion ; for, if the heat be too great, the whole will be discoloured.

6. AT the instant of perfect fusion, pour in the oil (which must be previously heated), by little and little, stirring it with a wooden spatula.

7. WHEN the fluid is uniformly mixed, take the pot off the fire, and stir it till it is merely warm. At this time, mix in the prescribed quantity of spirit of tur-

pentine, which should exceed the quantity of the oil. Remember well, that if the oil was more than *warm*, it would catch fire on adding the spirit of turpentine.

8. STRAIN the varnish through a fine cloth, to remove all impurities.

9. Should any of the copal, or the amber, remain in the strainer undissolved, expose the pieces to the action of the *air* for a long time, to dissipate the oil; and be particularly cautious against using them in varnish, till this operation is performed, or the adhering particles of oil will burn, and discolour the whole.

10. OIL varnish, if well preserved, is very much improved by age; but it is at the same time liable to grow thicker. When, therefore, oil varnish is about to be

used, the operator may render it more fluid, if necessary, by incorporating a little of the spirit of turpentine whilst the varnish is made hot in a water-bath.

11. IN the hottest days of summer good old varnish should be perfectly dry, and free from tacking, in twenty-four hours: in the winter, the room ought to be heated by flues in the wall, as well to prevent dust as to imitate the warmth of summer.

12. THE oils of poppies and of nuts are both used in the preparation of varnishes; but *very old* linseed oil, which has been drawn *without heat* (termed *cold drawn*), and perfectly *bleached*, is equally as good, and considerably cheaper.

GENERAL

used, the operator may render it more fluid, if necessary, by incorporating a little

## GENERAL REMARKS,

which is made hot in a water-bath.

WORTHY THE ATTENTION OF THE

## VARNISH-MAKER.

1. **ALL** Varnishes should be prepared of substances that are solid, glossy, and siccativ<sup>e</sup> \*; and the liquids in which these substances are dissolved should be limpid and colourless.

2. **ALL** bituminous and resinous substances which are adapted to the making

\* Expressive of a *drying quality*: the word is rather new, but is of French extraction,

186 GENERAL REMARKS.

of varnish will burn if they are too much heated, and will become friable and incapable of being polished.

3. THE materials should be very pure and clean, and should be rather broken into small pieces than pulverized (except in very particular cases), because they are less liable to burn, by their not adhering so readily to the sides of the containing vessel.

4. THE operation should be performed in an open place, during the *day-light*; for, if the spirituous vapour from the heated materials should take fire, from a *lighted candle* for instance, or other ignited body, the consequences might be disastrous.— A cover should, therefore, be in readiness (closely fitted), together with wetted cloths, to extinguish the flame,

5. SOME



## GENERAL REMARKS. 187

5. SOME forts of varnish, as has been observed, may be prepared by the heat of a water-bath only ; but as many will require a stronger heat, remember to keep the fire *constant* and *equable*.

6. SHOULD it *burn-to*, prevent its blistering by soaking the part instantly with spirits of wine ; or apply a compress moistened with spirit of wine.

7. WHEN the varnish is made, take great care to purify it as much as possible, by straining it through fine linen, or silk ; and keep it in *narrow-mouthed*, glazed, earthen bottles, closely stopped.

N. B. VERY nice operators prepare their varnish in glazed, earthen vessels, and use them *only once* for the same purpose ; they have experienced, that the heat communicated

## 158 GENERAL REMARKS.

communicated to the vessel may occasionally crack the glazing, which imbibing some of the former varnish, may communicate a brown colour to the new.

THE late ingenious Dr. Lewis\* has given a very valuable account of a mode of making amber varnish. It is a simple varnish, of great use for many purposes, and supposed to be the basis of the one used on coaches. The preparation is as follows:—Gently melt the amber in a crucible, then reduce it into a powder, and boil the powder in linseed oil, or a mixture of linseed oil and spirits of turpentine. Drying oil is commonly made use of by the workmen; but it seems more

\* See his "Commercium Philosophico-Technicum," 4to, London 1763.

## GENERAL REMARKS. 189

eligible to take the oil unprepared, that the boiling requisite for giving the drying quality may be employed at the same time in making it act upon the amber.

By the previous melting of the amber, its nature is changed, and part of its oily and saline matter expelled, as happens in the common distillation of it. When the distillation is not far protracted, the thinning black \* residuum answers as well as the amber melted on purpose. Hence some of our chemists, instead of urging the distillation to the utmost, by which the amber would be reduced to a mere coal, find it more advantageous to discontinue the process when the thinner oil and part of the salt have arisen, that the remaining mass may be in great mea-

\* It has been before observed that amber varnish is only used over "gold, and dark colours."

190 GENERAL REMARKS.

ture soluble in oils, so as to supply the common demand of the varnish-makers.

IT has generally been thought that amber will not at all dissolve in oils, till it has suffered a decomposition by fire. Hoffmann relates an experiment in his "*Observationes Physico-Chemicæ*," which discovers its solubility in its natural state. Powdered amber, with twice its quantity of oil-olive, was put into a wide-mouthed glass; and a digester, or strong copper vessel, being filled about one-third with water, the glass was placed in it, the cover of the digester screwed down tight, and a moderate fire continued an hour or more: when cold, the amber was found dissolved into a gelatinous transparent mass.

IN Dr. Stocker's "*Specimen inaugurale de Succino*," printed at Leyden 1760, there

are

## GENERAL REMARKS. 191

are many more important experiments, made by himself and his friend M. Ziegler of Winterthur. They found that by continuing a simmering heat for twelve hours, and confining the vapour as much as stone-ware vessels would bear without bursting (which may be avoided by a small notch in the stopple), powdered amber dissolved perfectly in expressed oils, in turpentine, and balsam of copaiba.

THE solution in rape-seed oil, and in oil of almonds, was of a fine yellowish colour; in linseed oil, gold coloured; in oil of poppies, yellowish red; in oil-olive, of a beautiful red; in oil of nuts, deeper coloured; in oil of bays, of a purple red. It is observable that this last oil, which of itself, in the greatest heat of the atmosphere, proves of a thick butyraceous consistence, continued fluid when the amber

was



was dissolved in it. The solutions made with turpentine, and with balsam of copaiba, were of a deep red colour, and, on cooling, hardened into a brittle mass of the same colour. All the solutions mingled perfectly with spirit of turpentine. Those made with the oils of linseed, bays, poppies, and nuts, and with balsam of copaiba and turpentine, formed hard, tenacious, glossy varnishes, which dried sufficiently quick, and appeared greatly preferable to those made in the common manner from melted amber.

AN *amber varnish* may be otherwise made, by melting eight ounces of Chio turpentine, and, when fluid, pouring into it by degrees a pound of finely powdered amber, and stirring it; and when it is properly mixed, setting it on a fire for half an hour, taking it off, and stirring it well,  
and

## GENERAL REMARKS. 193

and adding to it two ounces of white colophony (*white resin*).—Cover it close, and melt the mass into a perfect fluid; then *let it cool*, and, when *warm* only, add a pound of linseed or poppy oil, made drying, and hot. Stir and incorporate the whole, and finally put in a quart of warm turpentine.—When the whole is uniformly mixed, strain it off, and bottle it for use.

A MOST excellent *copal varnish* is made in France, under the name of *Vernis Martin*, in the following manner:—Take a strong well-glazed earthen pot, in form like a chocolate pot, capable of holding a gallon at the least; put into it four ounces of Chio or Cyprus turpentine, and when this is dissolved, add to it eight ounces of finely powdered bright yellow am-

O                      ber;

## 194 GENERAL REMARKS.

ber \*; mingle them well, and set them on the fire for a quarter of an hour; then add a pound of copal broken in pieces, but not powdered; stir the mass, and add four ounces more of Chio or Cyprus turpentine, and a gill of warm spirit of turpentine; set it on the fire for half an hour; when taking it off, stir the contents, and add two ounces of the finest white colophony. Let the pot be again set on the fire, and remain till the whole is dissolved, when it will be as fluid as water; remove it again, and put in *gradually* twenty-four ounces of nut, poppy, or linseed oil, made drying and hot, and stir the mass with a deal stick. Give it one boil-up, and then cooling it a little,

\* The mixing of amber with copal is not usual, and is an exception to a general rule. The varnish, however, is excellent.

add

add a quart of hot turpentine; replace it on the fire, and boil it up once more, when an additional pint of hot turpentine is to be put in, and the varnish completed by boiling and stirring it well for a minute or more. Strain it, and keep it in narrow-mouthed stone-bottles; and if it is too thick when used, mix a proper quantity of the spirit of turpentine by the heat of a water-bath, which will give it fluidity. N. B. The older it grows, the better it will be.

Good *massich varnish* is prepared by putting twelve ounces of genuine massich, in tears, to one quart of spirit of turpentine, in a glazed earthen pot, and very gently and cautiously heating them till they are thoroughly incorporated. Strain off, and bottle it for use. N. B. The

maſtich varniſh of the ſhops is in general too poor and thin.

FOR pictures and paintings in oil, the following varniſh is highly recommended:—it is not at preſent common in the ſhops:

TAKE of the beſt copal varniſh \* one quart, and ſet it on a moderate fire, in a glazed pipkin, till it is hot; at the ſame time, put one pint and a half of turpentine, and half a pint of ſtrong good drying-oil into another pipkin; and having made them hot, pour the varniſh by little and little into the turpentine and drying-oil, replacing the pots each time to preſerve the heat. Stir them well, and incorporate them together; and complete

\* The Birmingham varniſh is the beſt for this purpoſe.



the process expeditiously, lest the fire should change the colour of the varnish.

The admixture of oil prevents the varnish from cracking; but as it at the same time delays the drying, it should be laid on in a place free from dust, and remain undisturbed for two or three days. It will nourish and beautify the colours, and will never be found to chill.

AMONGST A VARIETY OF MODES OF WORK-

ing, and peculiar forms of receipts, of

## MISCELLANEOUS OBSERVATIONS.

been collected; not so much with a view

of exhibiting what is curious, as of ex-

tending the necessary information for the

**W**HEN the young student has put in

practice the rules laid down in the former

part of this volume, he may venture to

speculate in experiment. But here he

should be extremely cautious how he ad-

mits his discoveries to be introduced. If

he too hastily receive as valuable, what

time shall prove to be false, he will have

done more injury, and have spread greater

mischief, than his genius and talents will

counterbalance. Colouring, however, is

capable of improvement, and is deserving

the serious attention of the artist: he has

need only of caution, and strict veracity

in his recital,

AMONGST

AMONGST a variety of modes of working, and peculiar forms of receipts, of the great masters, the following have been collected ; not so much with a view of exhibiting what is curious, as of extending the necessary information for future experiment. By being well acquainted with what has been already done, a great deal of time and expence is saved that would infallibly produce vexation and disappointment.

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#### A METHOD OF SETTING A PALETTE.

1. The principal light of *flesh* is composed of white and Naples yellow, or light ochre, or brown ochre, according to the complexion of the person to be represented : of these, form the first and second tints.

O 4

2. WHITE,

2. WHITE, light red, with a little yellow.

3. THE same, a little darker.

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#### FOR THE MEZZOTINTO.

1. WHITE, black, and yellow, tempered with a little red.

2. THE same, a little darker.

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#### ANOTHER METHOD OF SETTING A PALETTE.

1. LIGHTS. Yellow ochre and white.

2. DITTO. The same, a little darker.

3. DITTO. Burnt ochre, a little yellow ochre, and some white.

4. DITTO. The same, a little darker.

—For a fine complexion, add vermilion in the tints No. 3 and 4.

5. LIGHTS.

5. LIGHTS.—Vermilion is necessary in the cheeks, but mixed with white.

6. HALF-TINT.—The same as No. 1, with black.

7. SECOND TINT.—Yellow and black, with red in the dead.

8. THIRD TINT.—Terra di Sienna burnt, with yellow and black.

9. REFLECTIONS.—To No. 3 add yellow ochre and brown ochre.

10. DITTO.—To No. 4 add lake and burnt ochre.

11. BLACK.—Lake, burnt ochre, and terra di Sienna.

It is a good method to observe to lay those colours near each other which harmonize: for instance, first, white, then Naples yellow, next light yellow, dark yellow, burnt ochre, vermilion, burnt terra di Sienna, lake, blue, umbre burnt  
and



and unburnt, black. Place also the several tints made of these colours in like harmony, beginning with the lightest of each, and arranging those of the next degree of strength one beside the other.

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IN the works of many of the best masters, when there is a dark or middle tint, there is light always opposed to it. As for example : on foregrounds, or at second and third distances, where some object, such as water, buildings, &c. are kept in shade,—figures, plants, &c. with an accidental light introduced on them, come well off of those shaded parts;—dark objects relieve also well on the foreground, or elsewhere, when those behind them are light. In regard to trees, their brightest lights are generally in the middle; and

and the lights lessen by degrees, in proportion to their distance from the principal light. It must be observed, that the edges of trees in particular are never to be too strong or hard, even in the most shaded parts.

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THE following principle has been observed in the works of some good painters. In painting rocks, roads, &c. they have laid their ground in a shade of blue-black, ending here and there at the extremities in a reddish cast, of the shade side. Towards the light or half-tint, they have touched upon the same colours, mixing more or less of yellow or black with them, in proportion to the degree of strength they intend to produce, leaving between their half-tints and shade the coolness of blue-black, as also between  
the

the half-tints and lights. They paint the lights of a rich warm cast, such as yellow and terra di Sienna will produce; observing to accommodate the whole to the point of time, or degree of light, they introduce throughout the picture, and which never fails to produce harmony when managed with judgment.

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**UMBRE**, burnt or unburnt, is an excellent colour for dead-colouring, as it has a good body.

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**CRYSTAL** pounded to an impalpable powder is a very good dryer of the colours, mixed either with oil or varnish.

IN order to dry a picture quickly, place the back towards the sun, which will effect the purpose without detriment to the colours.

IT is of great importance to paint the first and second paintings of good body colours, reserving the more brilliant touches for the finishing, which is to be performed by glazing. It is reasonable to suppose that a proper foundation of strong holding colours is necessary under the more delicate, in order to make them last and bear out the better; whilst, on the contrary, if solid colours are used on the thin and brilliant, the effect must be dull and heavy. Besides, if the finest and brightest colours are used in the first and second colouring, what colours can

be found to brighten with in the finishing?

AN excellent method of re-touching at pleasure is,—to mix equal parts of drying-oil and clear nut-oil, and with a sponge or brush moisten the parts to be re-painted.

SOME artists prefer good poppy-oil to nut-oil for re-touching or re-painting over parts of pictures, conceiving it less liable to change, and working more freely under the pencil.

IF sky, face, drapery, &c. are required to be retouched in water-colour paintings,



paintings, the back of the picture is to be moistened with a wetted sponge, after which it may be re-touched, scumbled, &c. as often as needful.—This method succeeds very well when the picture is painted on fine cloth, or silk; but not so well on paper.

TO prevent the colours from ever changing, and for preserving them in their original beauty, force and vigour, the cloths should be primed with black made of burnt peach-stones, mixed with white: that is to say, the second going over the cloth, or the last hand, as it is termed, should be done with this black and white, and the picture will be fresh and without change to the last.—This was the general practice and advice of the late Mr. George Robertson, a landscape-painter

painter of first-rate abilities, whose memory will be ever respected.

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POUSSIN, as well as other great masters, have made use of the following colours in draperies with very good effect, viz. a *yellow* under-drapery, with a loose upper-drapery of *red*, on his principal figure; near that, one clad in a *lead* or *slate-coloured* upper-drapery, under which is a *faded pink colour*; on the next figure, a *dark blue*; and on those near the foreground, such as half-naked figures, some with *light-blue stuffs*, others with *faded pink colours*; and on the figures behind, the same stuff, more broken and indistinct, in proportion to their distance. All these colours harmonize well together; but it is to be observed, that they are of a low tone, such as *old* stuffs produce, and that the folds are soft as if copied from a  
fine

fine sort of old woollen cloth ; not from rich and gay silks, full of glare and hardness.—A *buff-coloured* waistcoat, with the shirt sleeves appearing, and the legs either bare, or covered with a *dark-blue* or *brown* stocking, is a dress frequently used by the best masters in their landscape figures.—

A *faded yellow* waistcoat without sleeves, or with *faded* red sleeves ; *dark-blue* or *yellow* breeches, with the legs either bare or covered with a *slate* or *light-coloured* stocking ; all these colours harmonize, and are worthy of imitation, as they have been applied by the first Italian artists, among whom may be named Raffaele \*, Dominichino, Guido, the Carracci, Pouffin, &c. They usually made choice of the best coloured stuffs, and knew how to vary them at pleasure, and are therefore

\* Sir Joshua Reynolds's orthography.

models very proper to be attended to.—

The Flemish masters afford examples of great excellence, but the Italians have been the most successful in this practice.

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IN order to represent the *sun* or *moon* with an amazing force, lay on the spot or place where it is intended the greatest light or glow shall be, some varnish, or body of fine white; upon this stick gold or silver leaf (whichever is to be painted, either sun or moon) and glaze over with yellow-lake, brown-pink, or Naples yellow, in proportion to the effect of sunshine or moon-light. This, well managed in the glazings and re-touchings, will produce a wonderful effect.

TO represent clouds in the day-time, there ought to be a little masticot mixed with the white, with sometimes more red, sometimes more yellow, at discretion. In case the sky be stormy, in certain places it will be clear; in which places blue and red must be made use of, in the same manner as in the clear sky, losing them gradually in the pencilling and finishing.

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THE best sort of terra di Sienna burnt and mixed with white, and a very little ultramarine, make an exquisite flesh colour, and a fine-toned sky.



INDIAN red, with true ivory black, makes a fine warm colour.

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FOR painting trees:—The trunk may be laid in with ochre; in the white and clear parts put a little green, and in the brown parts put a little black, adding green for the shade both to one and the other. Tints may also be made of blue and yellow, with here and there some touches of white, or masticot, just as it often appears in nature.

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FOR herbage, and foliage:—On the fore-grounds, when the ground is painted in, lay them in with sea-green; and if they are yellower, use masticot: in the

shades

shades use green, with brown for such as are withered and dead.

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M. DE PILES observes, that Claude Lorrain added to the tenderness of his trees by *glazing*.

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WHITE is not used as a glazing colour, having too much body; nevertheless, it may be applied with tolerable success, if used with thin varnish.—In the flower-pieces of Baptiste and others, a glazing of white may be detected, which produces a rich effect.

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IN favour of good linseed-oil, it is remarked by M. De Piles, in his Life of John Vanburgh, commonly called John

of Bruges, that in searching for a good varnish he found OLD linseed-oil was the best medium for colours. To him the art of painting is indebted for the perfection to which it has arrived by the means of this invention: and the works of John of Bruges, increasing in beauty, are purchased by the great, and assigned to the first places in their cabinets.

PICTURES that have been covered with mastich varnish and shut up in a close room are frequently mildewed: to take off this mildew, the following method is recommended: Wash the picture with a clean sponge dipped in an equal quantity of vinegar and water, luke warm, which will readily remove the mildew; afterwards, rub the surface gently till it is dry,

dry, and moisten it with purified nut-oil, continuing to wipe it clean off till the picture is restored.

THE late Mr. Wilson, landscape painter, had a method of preparing Asphaltum, which he used with great success: Put two ounces of balsam of copaiba into a pipkin, over a slow fire; let it simmer, and add one ounce of asphaltum, bruised, and as much spirit of turpentine as will make it liquid: take great care that it do not take fire. The above composition is an excellent glazing colour in the shadows of flesh, draperies, fore-grounds, &c. and particularly in scumbling. It may perhaps be advisable to mix it with a small quantity of lake, blue, or terra di Sienna, any of which colours will fix it, and preserve it from turning black.

ANOTHER method of preparing asphaltum is,—to melt two ounces of Venice turpentine over a slow fire in a glazed pipkin, and to add one ounce of bruised asphaltum : when the two are well incorporated, thin it properly with spirit of turpentine ; but in doing this, take it off the fire.

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POWDERED Egyptian mummy is used by some artists as a good glazing colour, but it is long in drying. As good a colour, and a better dryer, may be made by burning Prussian-blue in a covered crucible : it requires no drying-oil.

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IN order to obtain a very lively and beautiful green, paint the object, whether  
 tree,



tree, drapery, &c. quite blue, and glaze it over with brown pink, which will produce the finest effect.

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A BRILLIANT green may be produced by painting the ground white, and glazing over it with verdigrise mixed up with varnish.

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THE smoke which issues from the burning of damp straw gives a fine tint to drawing-paper, and likewise gives an old look to a fresh picture.

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and indeed the principal one yet known  
is extracted from lead. The danger of  
the process, and the dreadful disorder  
with which those employed in it are

## WHITE PIGMENTS.

TAKEN FROM A MEMOIR OF M. DE  
MORVEAU, READ IN THE ACADEMY  
OF DIJON.

**WHITE** is the most important of all  
colours in painting. It affords to the  
painter the materials of light, which he  
distributes in such a manner as to bring  
his objects together, to give them relief,  
and that magic which is the glory of his  
art. For these reasons, my attention will  
be confined to this colour.

THE first white which was discovered,  
and

and indeed the principal one yet known, is extracted from lead. The danger of the process, and the dreadful distemper with which those employed in it are often seized, have not yet led to the discovery of another white. Less anxious about the danger of the artist than the perfection of the art, they have *varied* the preparation, to render the colour less liable to change. Hence the different kinds of white, viz. white of Creams in Austria, white lead in shells, and white cerusse. But every person conversant in colours knows that the foundation of all these is the calx of lead, more or less pure, or more or less loaded with gas. That they all participate of this metallic substance will indeed be evident from the following experiment, which demonstrates and determines the alterability of colours by phlogistic vapours.

I POURED

I POURED into a large glass bottle a quantity of liver of sulphur, on a basis of alkali, fixed or volatile, it makes no difference. I added some drops of distilled vinegar, and I covered the mouth of the bottle with a piece of pasteboard cut to its size, on which I disposed different samples of creams, of white lead, and of cerusse, in oil and in water : I placed another ring of pasteboard over the first, and tied above all a piece of bladder round the neck of the bottle with a strong packthread. It is evident, that in this operation I took advantage of the means which chemistry offers to produce a great quantity of phlogistic vapour, to accomplish instantaneously the effect of many years ; and, in a few words, to apply to the colours the very same vapours to which a picture is necessarily exposed, only more accumulated and concentrated. I say the same vapour ;

pour; for it is fully established, that the smoke of candles, animal exhalations of all kinds, alkalescent odours, the electric effluvia, and even light, furnish continually a quantity more or less of matter, not only analogous, but identically the same, with the vapour of vitriolic acid mixed with sulphur.

If it happen that the samples of colour are sensibly altered by the phlogistic vapour, then we may conclude with certainty, that the materials of which the colour is composed bear a great affinity to that vapour; and, since it is not possible to preserve them entirely from it in any situation, that they will be more or less affected with it, according to the time and a variety of circumstances.

**AFTER** some minutes continuance in this vapour,



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vapour, I examined the samples of colours submitted to its influence, and found them wholly altered. The cerusse and the white lead both in water and oil were changed into black, and the white of creams into a brownish black; and hence those colours are bad, and ought to be abandoned. They may indeed be defended in some measure by varnish, but this only retards for a time the contact of the phlogistic vapour; for as the varnish loses its humidity, it opens an infinite number of passages to this subtile fluid.

AFTER having ascertained the instability of the whites in common use, I made several attempts to discover such as would prove more lasting; and though many of these attempts were without effect, I shall give a succinct account of the whole, which may save a great deal of trouble to those

those who wish to travel over the same field.

THERE are three conditions essential to a good colour in painting.

FIRST, That it dilute easily, and take a body both with oils and with mucilages, or at least with the one or the other of these substances; a circumstance which depends on a certain degree of affinity. Where this affinity is too strong, a dissolution ensues; the colour is extinguished in the new composition, and the mass becomes more or less transparent; or else the sudden re-action absorbs the fluid, and leaves only a dry substance, which can never again be softened. But if the affinity be too weak, the particles of colour are scarcely suspended in the fluid, and they

they appear on the canvass like sand,  
which nothing can fix or unite.

THE SECOND condition is, That the materials of which colours are composed do not bear too near an affinity with the phlogistic vapour. The experiments to which I submitted whites from lead are the infallible means of ascertaining the quality of colours in this respect, without waiting for the slow impresson of time.

A THIRD condition equally essential is, That the colouring body be not volatile; that it be not connected with a substance of a weak texture, susceptible of a spontaneous degeneracy. This consideration excludes the greater part of substances which have received their tint from

vegetable organization ; at least, it makes it impossible to incorporate their finer parts with a combination more solid.

AFTER these reflections, my researches were directed, first, to the five pure earths ; next, to the metallic earths, either pure or precipitated by Prussian alkali \*. M. Wenzel has discovered a sixth earth, which I call EBURNE, and which, after other experiments, I thought of applying to the purposes of painting ; but I soon perceived that it would have the same fault with other kinds of earth, and, besides that, it could not be obtained but at a very considerable expence.

THE five pure earths possess fixity in a very great degree, and at the same time

\* See the article PRUSSIAN-BLUE, in the *Materia Pictoria*.

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are little affected by the phlogistic vapour ; but they refuse to unite with oils or mucilages, and the white is totally extinguished when they are ground with those liquids. I made several attempts on earth of alum, not only because M. Beaumé recommended the use of it in painting, and because it enters into the composition of Prussian-blue ; but also because it is a chief ingredient in ochres, and other earths of that nature, which indicates that it would unite in a certain degree with diluting liquors. Notwithstanding, in whatever manner I treated it, it would not yield a white. But one will be less surpris'd at this want of success, when it is considered, that in the ochres and Prussian-blue the earth from alum is only the vehicle of the colouring body, whereas here it is the colour itself.

To be convinced of the truth of this  
 obser-



## ON WHITE PIGMENTS. 227

observation, it is only necessary to mix equal parts of this earth, or even of clay not coloured, with cerusse or any other white; the mixture will be susceptible of being ground in oil or in gum, without being extinguished; it will easily unite with any coloured substance, and be productive of no bad consequences to the pure earths.

NATURE and art present to us a considerable number of earthy compositions sufficiently white for the purposes of painting; such as the JASPER white, the FELDSPAT white, the SCHIRL white, &c. But all these substances, in all the trials I made, had the fault which I have already mentioned; and originating from the same cause: they wanted a fixed colouring body, which would not change

Q<sup>2</sup> when

when pulverized, nor be extinguished when diluted.

THE ultramarine blue, which is extracted from the blue jasper, and known by the name of lapis lazuli, seems at first view to warrant the possibility of appropriating to painting all the opaque half-vitrified compositions of the nature of jasper.

PREPOSSESSED with this idea, I conceived the hope of producing a true white lapis; but I soon perceived that the experiment confirmed the principle which I had laid down from my observations on pure earths; since it is not the substance peculiar to the jasper which constitutes the ultramarine blue, but the metallic substance which accidentally colours this particular kind of jasper.

## ON WHITE PIGMENTS. 229

IN the same manner, art, in this imitation of nature, should have for its object to give a permanent base to a colour already formed, to fix it without altering, and to augment perhaps its splendour and its intensity, without attempting to produce a colour.

IN excepting from earthy and metallic salts all those of which the acid is not completely saturated, which would easily attract the moisture of the air, or which would be easily dissolved, you have but a very small number to make experiments on.

THE natural and artificial SELENITE gives with oil a paste without colour, and tasting somewhat like honey; its white is better preserved with a gum, but even in this case it resembles a semi-transparent pap.

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THE natural or regenerated SPAT PÉ-  
RANT\* is the most likely salt to pro-  
duce white. As it is of all others the  
most difficult to dissolve, it appears after  
pulverization to be a very fine white, but  
is scarcely touched with oil when it be-  
comes grey and semi-transparent: the  
mucilage alters it also, although less dis-  
cernibly; and it does not even resume  
its white colour after it becomes dry on  
the canvass.

THE same is the case with the CAL-  
CAREOUS BORAX, formed by the solu-  
tion of borax in lime water: its white is  
completely extinguished with oil, less so  
with gum; but it hardens so instantane-  
ously with the latter, that it cannot be  
diluted again.

\* Perhaps, *island crystal*, or *refracting spar*.

CALCAREOUS TARTAR, obtained by casting quicklime into a boiling solution of cream of tartar, is affected with oil in the same manner as felenite; but with mucilaginous water it gives a pretty good white, only possessed of some reflection, and appearing like plaster. It applied very well to the canvass, and resisted the phlogistic vapour.

ACCORDING to M. Weben, in his work intituled *FABRIKEN UND KUNSTE*, published in 1781, the white called in Germany *KREMBSER WIESS* is nothing but the vitriol of lead, prepared by dissolving lead in nitrous acid, and precipitating it in vitriolic acid; and forming it afterwards into solid tablets by means of gum water. It is certain that this resembles in no manner the white called in France the white of crems; at least I never found



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that it could be dissolved in vinegar; but I tried the white prepared in M. Weben's manner, and the result was the same as above; that is, it turned it black.

THE *vitriols of lead and bismuth* alter more speedily than the calces of those metals. And thus, with the exception of *calcareous tartar*, which may be of some use in water-colours, the best earthy salts on which I have made experiments, may all, or the most of them, give a base to some colours, but cannot constitute by themselves a colour useful in painting.

OF the fifteen known metallic substances, there are nine which yield white calces, viz. silver, mercury, lead, tin, antimony, bismuth, zinc, arsenic, manganese.

OF

## ON WHITE PIGMENTS. 233

OF these nine substances we may pass over silver and mercury, because, though they yield a very fine white, precipitated by means of pure dry vegetable alkali, yet it is soon altered when exposed to the air; that from silver into black, and that from mercury into yellow.

It is well known that *lead* gives a very good white, and one which unites easily with oil or size; but that it is extremely liable to change, has been my principal object to prove; and the experiments I have made, place it beyond contradiction.

I SHALL only add, that if there be a preparation able to correct this fault, it should be the precipitation of the earth of this metal, from an acetous solution, by the Prussian alkali; but the white which results from this preparation becomes sensibly

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sibly brownish, when it is exposed a few minutes only to the phlogistic vapour.

It would be therefore unreasonable to persevere in the use of this substance, or to wish to render it fixed; since the changes which it undergoes do not alter its nature, and the indestructible order of its affinities.

THE *calx of tin* is easily applied to any purpose, and experiences no change from the concentrated phlogistic vapour. These considerations induced me to endeavour to obtain this calx perfectly white; and here follows the result of my experiments:—The Malacca tin calcined gives a pretty white calx; but, whatever attention I paid to take off the red surface which the violence of the fire occasioned, it takes always a shade of grey when it

is

is diluted. Tin calcined by nitre in fusion, gives a tarnished and gross calx, which continued washings could not deprive of a yellowish tint.

HAVING precipitated, by means of dry vegetable alkali, a solution of English tin in muriatic acid, after the manner of M. Bayen for extracting the arsenic, I had a calx of the purest whiteness, so light as to be buoyant on the liquor in the filter, and to pass through it in some quantities; but it possesses at the same time a kind of adherence with the salts, which makes the particles remaining on the filter to be incapable of being pulverized, gummy, semi-transparent, and of a yellowish hue. It is necessary to dilute it in boiling water, and afterwards to calcine the sediment slightly, when it has had sufficient time to settle.

I HAVE

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I HAVE employed the best Malacca tin and rectified nitrous acid, and have tried the calcination after the manner of Meyer. It formed a very white sparkling calx, which remained in the filter in the consistency of jelly.—Meanwhile, I observed that it was always a little yellow, by a mixture of a portion of earth which took, during the operation, the colour of turpeth mineral.

A VERY fine white calx is made from *antimony* calcined with nitre in fusion; but the earth of this semi-metal must be placed in the number of those which combine too easily with the phlogistic vapour. Diaphoretic antimony, ground in oil, took in ten minutes a colour like sulphur, in my phlogistic apparatus.

THE property of *bismuth* to give a fine  
white



## ON WHITE PIGMENTS. 237

white calx, called *magiftery*, or white paint used by the ladies, is well known. It is easily prepared, since it is only necessary to dissolve the bismuth in nitrous acid, and precipitate it by means of water. It dilutes perfectly in oil and mucilage.---But this colour ought to be rejected as the most alterable by the phlogistic vapour. It became completely black in ten minutes in my apparatus; and this fact is proved from what happens to persons who use this colour, when they are exposed to the vapours of sulphur, garlic, or any putrid substance\*.

ZINC furnishes, by all the processes of calcination and precipitation, a pretty white calx, when it is pure and separated

\* The same will happen to persons drinking salt water, and bathing in the sea; as is well known at Margate, &c.

from

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from iron; otherwise, the preparation of vitriol of zinc will become yellow when exposed to the air. I have precipitated it from this solution, by means of lime-water, and by caustic and effervescent alkali; I have calcined this semi-metal alone, and with nitre: and in all these operations I have obtained an earthy substance of different degrees of whiteness, which, after it was dried and prepared, mixed readily with oil and mucilage, without losing its colour; and which experienced no sensible change when exposed to the phlogistic vapour.

THESE valuable properties, the chief object of my researches, engaged me to multiply my experiments, to determine at once the most æconomical process, and the most advantageous and infallible preparation.---These attempts have convinced

## ON WHITE PIGMENTS. 239

vinced me, that the calcination of this semi-metal alone in a crucible, placed horizontally on the corners of a reverberating furnace, gives the purest, the whitest, and the least reducible calx; and that to make an excellent colour, it is sufficient to separate with water the parts unburned, and grind it with a little of the earth of alum or chalk, to give it a body. Zinc precipitated by Prussian alkali, even in distilled vinegar, retains always a shade of yellow, does not unite so well in oil, and takes a semi-transparent consistence, like cheese.

WHITE ARSENIC extinguishes much less in diluting than one would believe from its saline nature: it preserves its colour best in gum-water; and it is remarkable, that, instead of turning black in the phlogistic

gistic vapour, it takes a very distinct shade of yellow. This property is sufficiently singular and constant to furnish a new method of analysing arsenic, so as to know it. And this alteration of colour makes it of no use in painting, although its deleterious qualities might alone prevent the practice.

THE semi-metal known by the name of *manganese* gives also a white calx. I had at first great hopes from this colour, as, contrary to all those extracted from the other metals, it became white by the phlogistic vapour. There remained, therefore, but one difficulty to overcome, viz. to separate from the manganese the portion of iron which it usually contains, and which infallibly makes the earth a little yellow. To accomplish this in the cheapest manner, I submitted the black  
ore

## ON WHITE PIGMENTS. 241

ore of manganese to a long calcination, to render its iron insoluble. I afterwards applied vinegar to it, after the example of M. de la Peyrouse; and in precipitating the solution by alkali, I easily obtained a pure white precipitate. But I soon perceived that the facility with which a colouring body loses its phlogiston is no less an inconvenience than that of attracting it, and productive of the same alterations.

THE white of manganese became very soon yellow when exposed to the air; and this is not to be ascribed to the iron contained in it, since neither the galls nor Prussian alkali had discovered any of it in the solution. This substance, therefore, can be of no use in producing a white colour for painting.

R

I PLACED



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I PLACED (*when the experiments were made*) in my apparatus, pieces of cloth, on which were laid the white of calcareous tartar, different preparations of white from tin and zinc, in oil and water; and I allowed them to continue exposed to the phlogistic vapour during the sitting of the Academy \*. If they were not altered, their superiority over the whites in use would be sufficiently established. The sitting continued for near an hour; and the bottle having been opened, all the colours continued to have the same shade which they had before. I can, therefore, recommend to painters those three whites, and particularly that of zinc, the preparation of which is exposed to less variation, the shade more lively and uniform, and, moreover, it is

\* At Dijon.

fit

fit for all purposes, and perhaps procured at less expence.

I WILL assert farther, that it may be procured in sufficient quantities to supply the place of cerusse in every branch of the art, even in interior house-painting\*. I would recommend it less with a view of adding new splendor to this kind of ornament, than for the safety of those who are employed in it, and perhaps for the safety of those who inhabit houses ornamented in this manner.

BUT, without being too sanguine, although the process in the preparation be simplified in proportion to the demand, as is usually the case, yet there is reason

\* Would it not answer the purposes of an ingenious Colourman, to prepare and vend this pigment?

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to apprehend, that the low price of cerusse will always give it the preference in house-painting. With regard to those who apply colours to nobler purposes, they will not hesitate to employ the white of zinc. I am assured that four livres is paid for a pound of white of crems; and I believe the white in question, prepared in the manner which I have pointed out, might be sold for six.

M. COURTORS, connected with the laboratory of the Academy, has already declared that it is used in house-painting, less in regard to its unalterability than its solubility; and this may be the more readily believed, as the flowers of zinc enter into many compositions of the apothecary. M. Courtors has also arrived at the art of giving more body to this white, which the painters seemed to desire, and

## ON WHITE PIGMENTS. 245

of making it bear a comparison with white lead either in water or oil. The only fault found with it is its drying too slowly when used in oil; but some experiments which I have made, incline me to believe that this fault may be easily remedied, or greatly corrected, by giving it more body. At any rate, it may be rendered ficcative at pleasure, by adding a little vitriol of zinc (white copperas) slightly calcined.

PAINTERS already know the properties of this salt; but perhaps they do not know that it mixes with the white of zinc better than with any other colour, for the reason that they have chemically the same base. It is prepared by depriving the white copperas of that small portion of iron which would render it yellow; which is easily done, by digesting

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ing a solution of it on the filings of zinc.

A MIXTURE of this salt thus prepared may be made on the palette, which will cause no alteration in the colour, but be productive of great effect in a very small quantity.

F I N I S.



## 246 ON WHITE PIGMENTS.

ing a solution of it on the fangs of  
zinc.

A mixture of this salt thus prepared  
may be made on the palette, which will  
cause no alteration in the colour, but be  
productive of great effect in a very small  
quantity.

F I N I S .